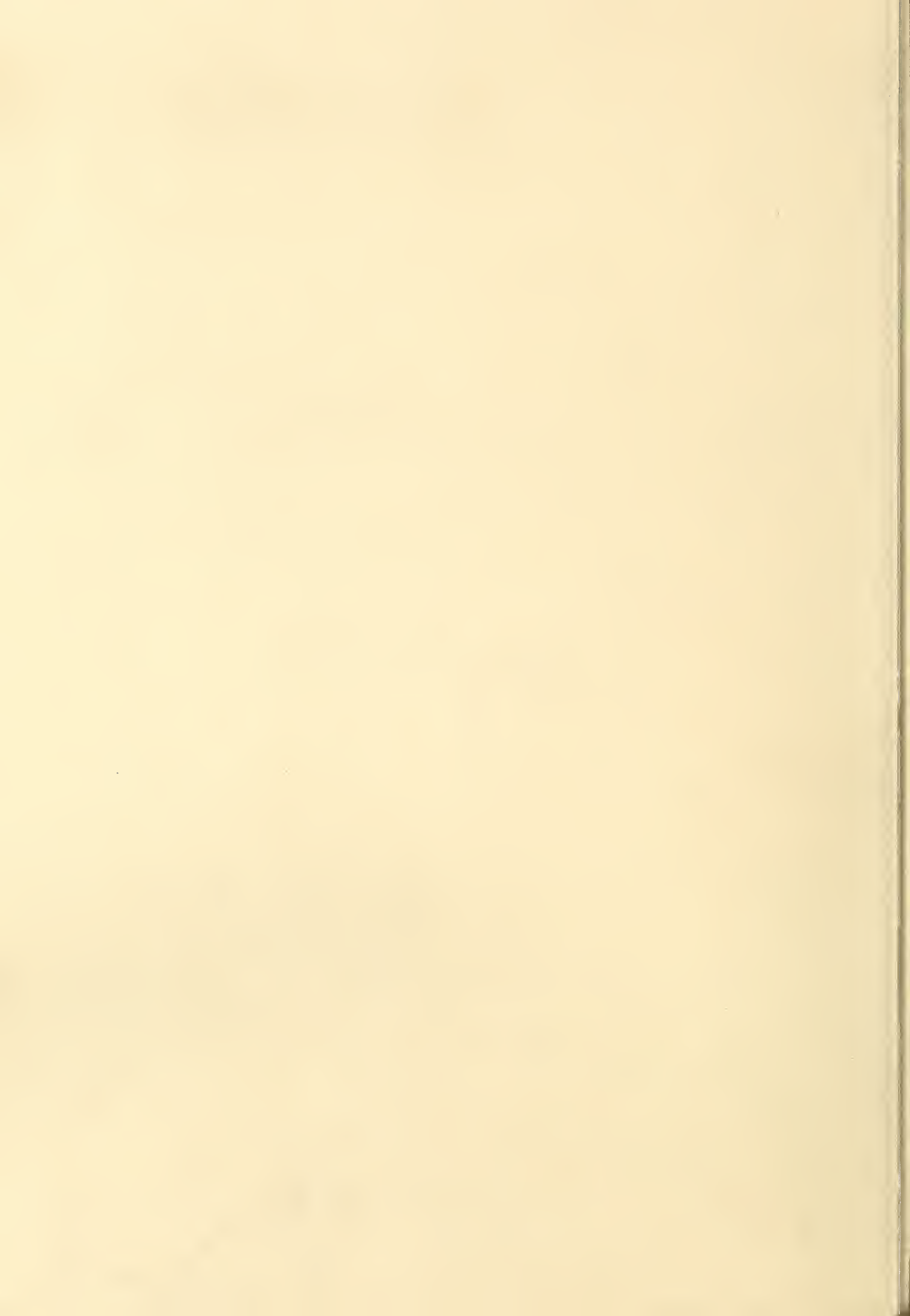


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BETTER FRUIT

VOLUME VI

OCTOBER, 1911

NUMBER 4

SPECIAL STATISTICAL EDITION



*Engraved direct from the fruit by the three-color process
Plates by Hicks-Chatten Engraving Co., Portland, Oregon*

APPLES, ABOUT TWO-THIRDS ACTUAL SIZE

Top row from left to right—Arkansas Black, Spitzenberg, Baldwin
Lower row—Red Cheek Pippin, Ortley and Winesap

Grown by E. L. Howe, Mosier, Oregon

“HEALTH’S BEST WAY—EAT APPLES EVERY DAY”

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States and Canada; Foreign, Including Postage, \$1.50

Single Copy 10 Cents

Dangerous Fruit Pests are Unknown
in the famous

BitterRootValley

on Montana's Pacific Slope
Where the Wormless Apples Grow

Smudging Is Unnecessary

There has not been a killing frost on the bench lands in the growing season in the history of the Valley. There are no dust storms.

Pure water and sunshine 300 days in the year make ideal health conditions.

Net profits annually range from \$2,000 to \$5,000

on a matured apple orchard of only ten acres.

Undeveloped land in this remarkable fruit district can still be bought for **less money** than is asked in other valleys less perfectly adapted by nature for successful fruit growing. Values now range from \$250 to \$350 per acre.

Developed tracts of ten acres, with contract to cultivate and care for same to five-year maturity, cost only \$5,000 if purchased now. Easy terms of payment for both developed and undeveloped land.

Detailed information upon request.

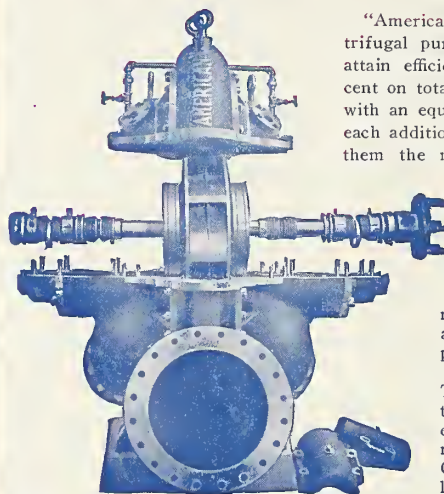
Bitter Root Valley Irrigation Co.

First National Bank Building, CHICAGO

All the Grand Prizes and All the Gold Medals

Given by the Alaska-Yukon-Pacific Exposition at Seattle
in 1909 to pumps were awarded to

"AMERICAN" PUMPING MACHINERY



"American" single stage centrifugal pumps are guaranteed to attain efficiencies of 60 to 80 per cent on total heads up to 125 feet, with an equal increase in head for each additional stage, which makes them the most economical pump made for irrigation purposes.

"American" centrifugals are made in both horizontal and vertical styles, in any size, in any number of stages, and are equipped with any power.

Write for "Efficiency Tests of American Centrifugals," by the most eminent hydraulic engineer on the Pacific Coast. Complete catalogue, No. 104, free.

The American Well Works

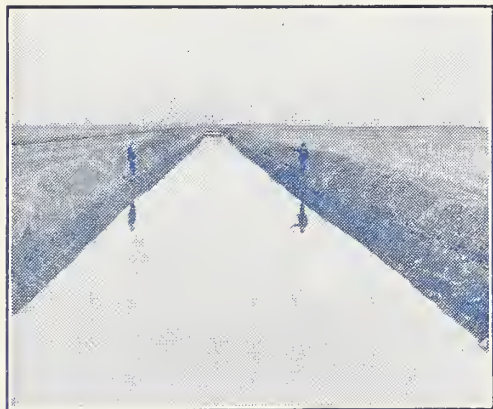
General Office and Works: Aurora, Illinois, U. S. A.
Chicago Office: First National Bank Building

PACIFIC COAST SALES AGENCIES:

70 FREMONT STREET, SAN FRANCISCO
341 SOUTH LOS ANGELES STREET, LOS ANGELES
SECOND AND ASH STREETS, PORTLAND, OREGON
1246 FIRST AVENUE SOUTH, SEATTLE
305 COLUMBIA BUILDING, SPOKANE

THE GRAVITY IRRIGATION SYSTEM OF THE SPOKANE VALLEY

Has developed the greatest apple and berry district of the West. **Nearness to market** causes larger net returns than in any other locality. Seventy-two trains daily through the valley. Every modern convenience. "Life's journey is swift; let us live by the way." The Spokane Valley has the unique distinction of being the only established apple district near a big city. Think what that means and investigate. Five thousand contented settlers.



THE BEST
IRRIGATION
SYSTEM
IN THE
WEST



HOMES AND SCHOOL IN THE
SPOKANE VALLEY

SPOKANE VALLEY IRRIGATED LAND CO.

401 SPRAGUE AVENUE, SPOKANE, WASHINGTON

A CHALLENGE

The NORTHWESTERN FRUIT EXCHANGE, from its General Offices in the City of Portland, Oregon, makes a SWEEPING CHALLENGE TO THE ENTIRE NORTHWEST, Washington, Oregon and Idaho, for a public comparison of AVERAGE NET CASH RESULTS on Apple Sales for the entire season of 1910.

The Exchange has already caused to be published through the public press, and otherwise caused to be disseminated in the widest possible manner, its season's averages, for over 60 different varieties of apples produced in every important district in the three states.

So far as it has been able to determine, based on the public announcement of others, it seems very clear that the results of the EXCHANGE are BETTER THAN THOSE OF ANY OTHER ORGANIZATION OR PERSON IN THE NORTHWEST not only from the standpoint of NET CASH RETURNS TO THE GROWERS, BUT also from the important point of distribution, the Exchange having employed 125 DIFFERENT Markets during the season.

Furthermore, the Exchange extends this challenge to embrace the METHOD OF SELLING, and makes the sweeping statement, based on the information available, that the Exchange disposed of a larger percentage of its output on an F. O. B. basis of sale than any other organization in the Northwest with an output of 100 cars or more.

Anyone wishing to accept this challenge may do so by appointing a certified public accountant who, together with another appointed by the Exchange, is to have access to the sales records of both contestants, the loser to pay for the services of both accountants. Access to its records will work no hardship on the Exchange, as its well known policy permits free access to its records at all times by any responsible, interested fruit grower.

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MARKET YOUR
FRUIT

RIGHT

ALWAYS SHIP TO

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WHOLESALE FRUITS
AND PRODUCE

108-110 Front Street
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The Old Reliable
BELL & CO.

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COMMISSION
MERCHANTS

WHOLESALE FRUITS

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200 WASHINGTON ST.
PORTLAND, OREGON

T. O'MALLEY CO.

COMMISSION MERCHANTS

Wholesale Fruits and Produce

We make a specialty
in Fancy Apples, Pears and
Strawberries

130 Front Street, Portland, Oregon

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.
GENERAL COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
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PORTLAND, OREGON

Levy & Spiegl

WHOLESALE
FRUITS & PRODUCE
Commission Merchants

SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns
PORTLAND, OREGON

Correspondence Solicited

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BUTTE, MONTANA

Branch Houses:

Livingston, Bozeman, Billings
Montana
Pocatello, Idaho
Salt Lake City, Utah

Wholesale Fruit and Produce

WE HAVE MODERN COLD STORAGE FACILITIES
ESSENTIAL FOR HANDLING YOUR PRODUCTS
*A strong house that gives reliable market
reports and prompt cash returns*

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of
YAKIMA VALLEY FRUITS
AND PRODUCE

Specialties: Apples, Peaches, ..
Pears and Cantaloupes

TOPPENISH, WASHINGTON

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES
TESTED



LENSES
GROUND

Over 30 Years' Experience

Telescopes, Field Glasses
Magnifiers to examine scale

Hood River Oregon and Glenwood Iowa

SGOBEL & DAY

Established 1869

235-238 West Street

NEW YORK

Strictly commission house. Specialists in apples,
pears and prunes. Exporters of Newtown Pippins
to their own representatives in England

QUALITY
QUALITY
QUALITY

D. CROSSLEY & SONS

Established 1878

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California, Oregon, Washington, Idaho and Florida fruits. Apples handled in all European markets. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; we sell apples. We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 FRANKLIN STREET, NEW YORK

NEW YORK

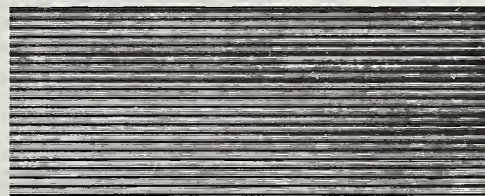
LIVERPOOL

LONDON

GLASGOW

Corrugated Paper

Its use in your Pear or Apple box will prevent the fruit from getting bruised when being packed or in transit.



Corrugated Paper Acts as a Cushion to Your Fruit

G. P. READ, 199 Duane Street, New York

Write for samples and prices. Send for one of my booklets on Fruit Packing Supplies. IT IS FREE.

Branch Office and Factory, Albion, N. Y.

SIMONS, SHUTTLEWORTH & CO., Liverpool and Manchester

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204 Franklin Street, New York

Walter Webling
46 Clinton Street, Boston

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C. W. King
Montreal, Quebec

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OUR SPECIALTIES ARE APPLES AND PEARS

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OREGON

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The Largest Commercial Magazine in the West. Devoted to upbuilding Oregon and the Pacific Northwest
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DAVID N. MOESSOHN, Publisher

Suite 716 Chamber of Commerce Building, PORTLAND, OREGON

Ship Your APPLES and PEARS to the Purely Commission and Absolutely Reliable House

W. DENNIS & SONS LIMITED

COVENT GARDEN MARKET
LONDON

and

CUMBERLAND STREET
LIVERPOOL

SLOCOM'S BOOK STORE

Office Supplies Stationery

Ledgers, Journals, Time Books
Memorandum Books
Rubber Stamps

Souvenir Postals Picture Frames

SEATTLE

Increased 194 per cent in population, according to Uncle Sam's last census. This is more than any other large city in the PACIFIC NORTHWEST.

WASHINGTON

Leads all states of the Union in growth, having increased 120.4 per cent, according to the same authority.

If you want accurate information about Seattle and Washington, subscribe for

PACIFIC NORTHWEST COMMERCE

The official publication of the Seattle Chamber of Commerce. Comes monthly, \$1.50 a year.

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Burpee's Seeds that Grow

140 VARIETIES ANY QUANTITY

Plenty of stock in our 40,000 pounds

Growing Plants as season requires

All makes high grade

Pruning Tools

Garden Tools

Hose and Spray Nozzles

International Stock and

Poultry Food

International Remedies

Incubators and Brooders

Everything for Building

Everything for Furnishing

Stewart Hardware & Furniture Co.
22,000 feet floor space. Hood River, Oregon

Spitzenbergs & Newtowns

From the
Hood River Valley,
Oregon

Took the first prize on carload entry at the Third National Apple Show, Spokane, Washington, and Chicago, Illinois, 1910.

The Spitzenberg car scored, out of a possible 1,000 points, 997. The Newtown car, out of a possible 990 points, scored 988.

The Spitzenberg carload also won the championship carload prize at this show.

Can You Beat It?

We have got land improved and unimproved that is growing such fruit and that can grow it.

We are agents for the Mount Hood Railroad Company's logged off lands in Upper Hood River Valley. Many started in a small way; today they are independent. You can begin today. It pays to see us. Send today for large list of Hood River orchard land, improved and unimproved, and handsome illustrated booklet.



The above picture shows a prize-winning exhibit of Upper Hood River Valley apples at the Hood River Apple Show

W. J. Baker & Company

Hood River
Oregon

The oldest real estate firm in Hood River. Best apple land our specialty

TREES APPLE, CHERRY TREES PEAR, PEACH

MILTON NURSERY COMPANY

A. MILLER & SONS, Inc.

You cannot afford to take a chance in buying trees to plant for future profit. It requires knowledge, experience and equipment to grow reliable nursery stock.

OUR 33 YEARS' EXPERIENCE in growing first-class trees, true to name, for commercial orchards, insures our customers against any risk as to quality and genuineness of stock.

Orders are now being booked for fall delivery 1911. Catalog and price list free for the asking.

Address all communications to

MILTON NURSERY COMPANY, Milton, Oregon

Stanley-Smith Lumber Co.

WHOLESALE AND RETAIL

LUMBER

Lath, Shingles, Wood, Etc.

HOOD RIVER, OREGON

Ryan & Newton Company

Wholesale Fruits & Produce

Spokane, Washington

We have modern cold storage facilities essential for the handling of your products

Reliable Market Reports

PROMPT CASH RETURNS

YAKIMA COUNTY HORTICULTURAL UNION

North Yakima, Washington

C. R. Paddock, Manager

Apples, Pears, Peaches, Cherries
Plums, Prunes, Apricots, Grapes
and Cantaloupes

Mixed carloads start about
July 20. Straight carloads in
season. Our fruit is the very
best grade; pack guaranteed

We use Revised Economy Code

References { District National Bank
American National Bank

Codes { Economy
Bakers
Revised Citrus

ERNEST M. MERRICK Wholesale Fruit Commission Merchant APPLES A SPECIALTY

937-939 B Street, N. W.

WASHINGTON, D. C.

We have been established here for over twenty-two years in one of the best localities in the city. Our facilities are at least equal to any house in the city in our line of business.

WE SPECIALIZE IN APPLES

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

WE WANT TO REPRESENT THE GROWERS OF
BETTER FRUIT. We know that our
BETTER METHODS of selling will bring
BETTER RESULTS

A Trial Solicited

All Shipments Receive Personal Attention

Grafted Walnut Trees

We do not grow regular nursery stock, but make a specialty of first-class grafted Walnut Trees. While we are growing and grafting our own trees for our 250-acre tract, we decided to grow some trees for sale.

In doing so we believe we are offering the very best trees that can be bought at any price. Vrooman Franquettes grafted on Royal Hybrid and California Black roots.

Our supply has never been equal to the demand, so if you want to be sure and have your order filled, order early.

Ferd Groner

Rose Mound Farm HILLSBORO, OREGON

Correspondence

is as necessary in the fruit business as in any other line. To carry on a successful business correspondence you need good business stationery. We print the good kind—the kind you will not be ashamed to send to your correspondents no matter who they may be or where they may be located—the kind possessing that quality which will attract favorable attention. Favor us with your next order for business stationery—be it small or large—and see how pleased you will be. “Quality” is our slogan

F. W. Baltes and Company
Designers • Printers • Binders
Portland, Oregon

IDEAL NURSERY STOCK

We have all of the Standard Varieties for the Northwest and
Invite Inspection of what we have to offer.

Our scions are selected with care from Hood River orchards. Our stock is grown in Hood River
Reasonable Prices and Special Inducements to Large Planters.

We also have a very fine block of Clark Seedling Strawberry Plants to offer.
Also small fruits for the home garden.

IF INTERESTED WRITE FOR PRICES AND CATALOGUE TO

IDEAL FRUIT AND NURSERY CO., Hood River, Oregon

WOULDN'T YOU

Like to move to a new country if it was not
for the PIONEERING?

OPPORTUNITY

Is a new fruit district (under irrigation five years) but three miles from the city of Spokane in the famous Spokane valley. All our tracts have electric lights, domestic water, telephones, in fact every modern convenience. Large profits and an ideal home.

Get particulars from **CALLISON & IMUS**, Exclusive Agents
326 W. First Avenue, Spokane, Washington

Mosier Fruit Growers' Association

APPLES

PRUNES

PLUMS

CHERRIES

PEACHES

PEARS

“Fancy Fruit in a
Fancy Pack”

Quality Apples
a Specialty

MOSIER, OREGON

The HARDIE TRIPLEX

The Sprayer with the Trouble Left Out



Each year demonstrates the fact that the Hardie Triplex is best adapted to Northwestern orchard conditions.

This machine is built to work successfully in any kind of an orchard, whether it is closely set or open, level or hilly.

By using good materials in construction, we give you light weight without sacrifice of strength.

All the liquid you need and at an even continuous high pressure.

A Hardie Triplex means to you Better Spraying in less time and at lowest cost.

A postal card brings you our new 64-page catalog; giving a detailed description of the construction of our Triplex and twenty other hand and power sprayers; new spraying devices, etc.

Write for it today.

The Hardie Manufacturing Company

Hudson, Michigan

49 North Front Street, Portland, Oregon

WHITE SALMON ORCHARD LANDS

The following improved ranch listed for sale for a few days:

80 acres with 30 acres set to apples, of which 16 acres are in bearing; balance of orchard, young trees one year old; 40 acres slashed and burned, ready to grub; 10 acres pasture. New apple house, 4-room residence, milk house and barn. Spring water piped to all buildings from springs on the ranch. Three acres in strawberries, also some pears and other fruits for home use. Ranch located only 2½ miles from White Salmon; fine view of the Columbia River, Mount Hood and the Hood River Valley. Ranch produced over 2,000 boxes of apples last year and should produce over 3,000 boxes next year. Owner will sell (if sold at once), including the crop, for only \$25,000.00, on these very easy terms: \$10,000.00 cash, \$2,000.00 in one year, \$1,750.00 in two years, balance \$1,625.00 a year until 1920. Interest 6 per cent. A BARGAIN AT THE ABOVE PRICE AND TERMS.

Another good buy is 10 or 20 acres two miles out, with spring water, for only \$100.00 an acre.

40 acres, out 12 miles, all good soil and location, only \$50.00 an acre.

80 acres, out 10 miles from railway station on North Bank Railway, \$62.50 an acre, including good house and 4 acres cleared ready to plant; also spring water.

For more information and BARGAINS IN ORCHARD LANDS, write or see

H. W. DAY REALTY CO., White Salmon, Washington

Cultivation and Irrigation

is what get results. Some well meaning but uninformed people will tell you that a good tree can't be raised by irrigation. Such talk is utter foolishness. On the contrary, the best trees can be raised by irrigation, if it is done right.

We don't depend on irrigation altogether to produce the tree. Incessant cultivation is necessary. After irrigating we get on the ground as quickly as we can and turn under all the moist dirt, keeping the ground well loosened, so that it does not bake and harden.

Our success is not due to luck, but to our close attention to every detail of the business.

Will you need any stock this season? If so, send for our large catalog.

MORE SALESMEN WANTED



Toppenish
Washington

Do You Want a Home

in the midst of a delightful environment? A resort city with all modern improvements, mineral springs, scenic attractions, etc. Homeseekers needed to develop small tracts in the vicinity of ASHLAND, in the famed Rogue River Valley of Southern Oregon. For information regarding fruit, gardening, poultry, dairy products and stock-raising, address COMMERCIAL CLUB, Ashland, Oregon.

Advertisers please mention "Better Fruit" in correspondence.

AMERICAN APPLE EXPOSITION AND CARNIVAL

Auditorium, Denver, Colorado
Week of November 12

Growers in every apple district on the American
Continent are invited to send exhibits

AMERICAN APPLE CONGRESS ANNUAL CONVENTION SAME WEEK

The City of Denver intends to make this the greatest Apple Show ever held on earth. Carnival features will be introduced to make the week an occasion of continued festivities

WRITE FOR PREMIUM LIST

American Apple Exposition Association

210-211-212 Chamber of Commerce Building
DENVER, COLORADO

CLINTON L. OLIVER, General Manager

The Storage in Transit Rate for Western Box Apples

Is now almost an accomplished fact, for we have advices from some of the interested lines that they have practically agreed to grant what we have been contending for day in and day out during the last several years.

From present indications the storage in transit privilege will cost 10 cents per hundred extra, which amounts to about 5 cents more than is charged at present. It is our judgment that this extra privilege is worth the price—for the benefit of the grower as well as the distributor. More details later.

Some of the railroad people can tell you how hard we have argued for this storage in transit rate, and they know from the volume of business we handle in the way of Western fruits that we would not suggest anything which might in any way operate to the detriment of the people engaged in producing them.

Our sole aim in handling these fruits has been (1) to secure the BEST possible prices, and (2) to do all in our power to get the widest distribution on prevailing rate bases at highest market values.

A great deal of this work has been done without fee and without price, and we have spent some of our own money besides to secure this big advantage which is now about to be thrown open to everybody.

But we hope everybody will derive some benefit from this concession.

Gibson Fruit Company, Chicago, Illinois

P. S.—Those who have apples and other fruits, and who may not already be tied up for marketing, should communicate with us promptly.

Some Talk Dutch, Some Talk German

SOME TALK EITHER

English, Irish, Swede, Danish, Italian,
Japanese or Chinese

We talk business.

We have the trees that please all nationalities.

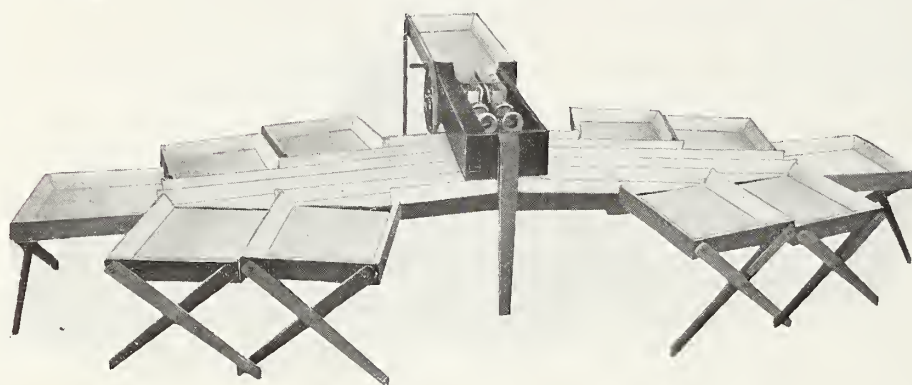
Why? Because they are grown right. Proper care is given to varieties. They are packed correctly for shipping. They are delivered on time. Our prices are right. Write for catalogue or call our salesman.

IF YOU CAN SELL GOODS WE HAVE
AN OPPORTUNITY FOR YOU

Capital City Nursery Company

Rooms 413-415 U.S. National Bank Building, SALEM, OREGON

APPLE GRADER



The Schellenger Fruit Grading Machine

Marks the dawn of a new epoch in the fruit growing industry. It places the **TIER PACK** without its drawbacks within the reach of every fruit grower.

It is common knowledge that the slightest bruise spoils apples for storage purposes; so delicate are they, that even the most careful handling detracts materially from their appearance, storage life and market value. Even when experienced hand sorters are working under the most competent supervision they bruise the fruit; also hand grading is but guess work which results either in loose ununiform packs, or necessitates still more handling and consequently more bruising to regrade the fruit, etc. The object to be sought in packing apples is **NOT ONLY** to avoid every chance of bruising, but to adopt a system of getting the fruit graded accurately for both color and size with an absolute minimum of handling.

THE SCHELLENGER FRUIT GRADING MACHINE process does away completely with 75% of the handling required by hand sorting. This is not all, it grades the fruit with mechanical accuracy **ABSOLUTELY WITHOUT BRUISING** and delivers to the packer perfectly sorted fruit which insures him a uniform, tight, fancy market pack.

By an ingenious method, one person does all the color and blemish sorting without picking up an apple, after which each color grade is automatically sorted into the standard five size grades and carried out onto canvas screens in front of the packers. The

opportunity provided for inspection of the graded fruit is perfect; there is triple assurance against a blemished or off-color apple getting into a pack.

During the grading for size the machine handles each apple separately, it is impossible for them to touch one another. All wool, first quality soft felt, $\frac{3}{8}$ of an inch in thickness protects the fruit against the slightest bruist. Some idea of the gentleness with which this machine handles the fruit can be gained when it is realized that it will handle eggs and not so much as crack one.

Fruit **NEVER** sticks or clogs in the machine because the mechanical features are perfect and the mechanism is built upon honor. No expense has been spared in either the quality of material used in our machines, or the labor in constructing them, **THEREFORE, WE CAN, AND DO, FULLY GUARANTEE EVERY MACHINE.**

This machine not only solves the labor problem for the grower but it will actually pay for itself in labor saved in less than ten days when run at full capacity. It does the work of **NINE** experienced hand sorters.

Each grader is arranged to be operated either by power or hand as desired. Price of machine, f. o. b. Salt Lake City, \$100.00.

SCHELLENGER FRUIT GRADING MACHINE CO.

INCORPORATED

633-635 South Fourth West Street

SALT LAKE CITY, UTAH

"Northwest"
trees
are best

"Northwest"
trees
are best

We have for the coming season a complete line of

NURSERY STOCK

Including everything handled in the nursery line

Write for our new prices and catalog

NORTHWEST NURSERY CO.
North Yakima, Washington

AGENTS WANTED

LEO UJFFY

New Orleans, Louisiana

Successor to

APPEL & UJFFY

The largest wholesale exclusive
Fruit and Fancy Vegetable Firm in the South

**IMPORTERS, RECEIVERS, JOBBERS AND
COMMISSION MERCHANTS**

Correspondence solicited



STANDARD SIZE

Capacity, One Gallon
Burns 8 hours

PRICE

Black Iron, 20c each
Galvanized, 23c each

And Still to the Fore

The BOLTON ORCHARD HEATER



LARGE SIZE

Capacity, Two Gallons
Burns 12 hours

PRICE

Black Iron, 26c each
Galvanized, 30c each

The Pioneer—Without a Peer

Absolutely essential to every grower. Drastic tests of last spring proved its infallibility. Operation perfect and simple. Construction unexcelled



Automatic ELECTRIC ALARM Thermometers

The
Watch Dog
of the
Orchard
\$22.50
DELIVERED

Specify alarm temperature required. It is advisable to have it set several degrees above the danger point.



The experimental stage has long since passed. Equip now. Next season may be more severe than last.

DON'T HESITATE DON'T DELAY

Send for our new booklet.
It will tell you how to save your fruit.

The Bolton Orchard Heater

of today is constructively perfect.
Better than ever.
Costs no more.Endorsed by California Fruit Growers' Exchange
and forty other Fruit Associations.

THE FROST PREVENTION CO.

Bank of Italy Building, SAN FRANCISCO, CALIFORNIA

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FRED H. HAMMER, So. California Agent, 107 So. Broadway, Los Angeles, California

YAKIMA REX SPRAY CO., Northwest States Agents, North Yakima, Washington

L. W. FISHER, Middle West Agent, 109 Temple Block, Kansas City, Missouri

John Amicon Brother & Company

Third and Naghten Streets, COLUMBUS, OHIO

Located on the Pennsylvania System Tracks and B. & O. Ry.

ALSO BRANCHES

Our market contains 200,000 inhabitants located in the central part of the state with many railroad and electric lines passing through here. 1,000,000 people in surrounding territory, who depend on this market for their supplies.

We want car lots of Western Apples, Peaches, Pears and Prunes. We are the heaviest operators in the state of Ohio in Western Box Apples.

Write today, stating number of cars you will ship; also state varieties. Look up our financial standing; ask any National Bank in city of Columbus.



Spray Your Fruit for Codling Moth with
Grasselli Arsenate of Lead
IT IS THE BEST

DISTRIBUTERS IN THE NORTHWEST:

Inland Seed Co., Spokane, Washington
Hardie Manufacturing Co., Portland, Oregon
Samuel Loney & Co., Walla Walla, Washington
Missoula Drug Co., Missoula, Montana
Western Hardware & Implement Co., Lewiston, Idaho
Salem Fruit Union, Salem, Oregon
Hood River Apple Growers' Union, Hood River, Oregon
C. J. Sinsel, Boise, Idaho
Yakima County Horticulturists' Union, North Yakima, Washington
Darrow Bros. Seed & Supply Co., Twin Falls, Idaho
Rogue River Fruit and Produce Ass'n, Medford, Oregon
And in all consuming districts.

Winners of the GRAND SWEEPSTAKES PRIZE of \$1,000.00 for best car of Apples shown at the National Apple Show, Spokane, Washington, were as follows:

1908—M. Horan, Wenatchee, Washington.
1909—Tronson & Guthrie, Eagle Point, Oregon.
1910—C. H. Sproat, Hood River, Oregon.

All the above sprayed with Grasselli Arsenate of Lead.

MANUFACTURED BY

THE GRASSELLI CHEMICAL CO.

Established 1839

MAIN OFFICE: CLEVELAND, OHIO

DISTRIBUTERS IN ALL THE FRUIT GROWING DISTRICTS

For further information write nearest distributor named above, or The Grasselli Chemical Co., St. Paul.

Branch Offices	{ New York	Chicago	St. Paul
	{ St. Louis	Cincinnati	Birmingham
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Established 1883

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Any reliable house in our line in the
United States*Commission
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 California Fruit Distributors.
 Earl Fruit Company.
 Pioneer Fruit Company.
 Producers' Fruit Company, Sacramento, Cal.
 Stewart Fruit Company, Los Angeles, Cal.
 Atwood Grape Fruit Company, Manavista, Fla.
 Florida Citrus Exchange, Tampa, Fla.
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*Apples, Plums, Prunes, Pears,
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We have the largest and best trade in the Cleveland territory; our facilities are unsurpassed
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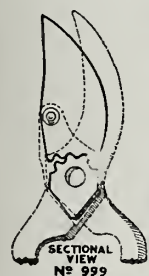
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They are made of the very best of materials and designed on practical and scientific principles. Not cheap nor built for cheap trade, but when strength, durability, capacity, ease of operation, and desirable qualities are considered, they stand alone. Cheap tools are generally expensive, while high grade, desirable tools are cheap at any reasonable price.

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Length 9 inches
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No. 1
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 and blade



No. 3

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FREY-WATKINS CO., INC.

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Cold storage at Le Roy and Hilton, New York. Ship your apples to us for sale and storage. Reasonable advances, prompt returns.

References: Produce Reporter Company, mercantile agencies, the banks of Rochester

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OUR PLAN: We plant, cultivate, irrigate, spray, prune and care for the orchard for four years. Water free. Real estate taxes paid for five years. Over 4,000 acres is now planted to winter apples. You may remain at your present occupation while your orchard is brought to bearing, or, if desired, move onto the land at once.

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Looking for the one ideal apple raising locality? The district which receives the very highest prices for its apples? The place where the very best social, climatic, scenic and transportation advantages combined make life well worth the living, and the only **proven** apple district where you can secure the best of land at reasonable prices?

IF YOU ARE

You are bound to decide on Mosier, Oregon (six miles from Hood River). Let us tell you more about it, either in person or by mail. Price list furnished on application.

D. D. HAIL CO.

MOSIER, OREGON

NO TROUBLE TO ANSWER QUESTIONS

What Constitutes a Good Spray Pump?

High Pressure—to throw a strong, fine spray.

A Pump—of sufficient capacity under slow speed.

An Agitator—to keep mixture well stirred so that it cannot clog pipes and nozzles.

Some Method of Cleaning the strainer.

Ask any fruit farmer with experience. He will tell you that the most annoying thing is to find pump, suction or nozzles clogged when he has a tank full of spray mixture in the orchard and must *clean out* before his sprayer will work.

Here We Come In

Automatic Brushes with Mechanical Agitators furnished with Empire King Barrel Pump and Watson-Ospraymo Potato Sprayer, also with Leader-Triplex Gasoline Engine Machines of

10 gallons per minute capacity, and capable of a nozzle pressure of 250 to 300 pounds.

These Triplex Pumps are run only 40 to 50 revolutions per minute. This slow speed means long life, greater efficiency, less up-keep cost, the weight is not too heavy for two horses—1550 pounds with 2 H.P. engine and 150 gallon tank, including wagon with five-inch tires; or with 3½ H.P. engine and 200 gallon tank, 1800 pounds.

The prices are not too high for efficiency, durability, capacity and satisfaction.

Are you interested? A postal will bring you into touch with our nearest agency.

FIELD FORCE PUMP CO.
Dept. B ELMIRA, N. Y.

**Insist on
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THE PIONEER BOX APPLE HOUSE OF

BALTIMORE

THE GATEWAY OF THE SOUTH

We represent the leading Pacific Coast shippers, including Mutual Orange Distributors, Stewart Fruit Co., San Joaquin Grape Growers' Association and others

Members National League of Commission Merchants
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Telegraph Codes { Modern Economy
Revised Economy
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ESTABLISHED 1898

M. O. BAKER & CO.

Commission Merchants

Fruits and Produce

122 Superior Street, TOLEDO, OHIO

Apple Headquarters for Toledo, Ohio

Don't take our word for it; write the other dealers here.

Our regular trade takes 50 to 100 Cars every season. We are the apple people.

M. O. BAKER & CO., TOLEDO, OHIO

To the Jobbing Trade:

We cordially invite correspondence from all high class fruit jobbers relative to supplying their trade the coming season with the finest apples grown on earth. Our brilliant red *Spitzenbergs* for early *winter* trade and our beautiful *Yellow Newtown Pippins* for the *spring* trade are the two ideals of the Apple World, and for flavor, beauty and keeping qualities they are not equalled. Buy goods of *quality* and your trade will appreciate the same. Write

Hood River Apple Growers' Union
HOOD RIVER, OREGON

G. W. Butterworth, Northeast Corner Second and Dock Streets
PHILADELPHIA, PENNSYLVANIA

SPECIALIST IN

Western Box Apples, Pears and Deciduous Fruit

EFFICIENT HANDLING OF ASSOCIATION ACCOUNTS

Member National League of Commission Merchants of United States
International Apple Shippers' Association

Reference, Everybody

IF YOU WANT UP-TO-DATE SERVICE GET IN TOUCH WITH US

BEST FACILITIES IN AMERICA FOR THE STORAGE OF

Export Apples

Ample steamship sailings with apple space always available for London, Liverpool,
Manchester and Glasgow

FREE INSURANCE

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LIBERAL ADVANCES

 Write us and acquaint yourself with Boston's special advantages for the storage of export fruit

BOSTON TERMINAL REFRIGERATING COMPANY

CHAS. L. CASE, Manager

GRAND JUNCTION WHARVES, EAST BOSTON, MASSACHUSETTS

PHOTOGRAPHS CANNOT LIE—They show exactly what comes before the camera. Half-tones are exact reproductions of photographs and are necessarily true to nature.



A block of Bing, Lambert, Royal Ann (Napoleon) as the camera shows it

Sweet Cherry

For the western cherry grower we have thousands upon thousands of handsome 1-yr. and 2-yr. trees, grown in the finest cherry soil in the world. Bing, Lambert and Royal Ann (Napoleon) constitute the bulk of our sweet cherry blocks, and these three varieties are the ones that are planted almost exclusively and are the ones that have made the cherry regions of the West famous. They are unfailing money makers.

Sweet cherries can be grown only in favored localities; the area is so limited that over production cannot be considered even among the possibilities—at least for many years. Therefore, these regions must increase their plantings as the demand for the fruit is increasing with each season—much more rapidly than the production, and the markets have never been one-tenth supplied. They should be planted by the thousands of acres. Cherry growing for the canners—to say nothing of the great and growing markets for the fresh fruit—is becoming one of the great industries of the West and it is only fairly well begun. The markets of the world are open to the producer.

Condensed Stark Year Book, 1912, is now in the hands of the printers and will be sent free to any reader of **Better Fruit**. Write for it today, and when writing tell us your planting plans. Perhaps some lessons we have learned in our many years of experience in nursery and orchard will help you steer clear of some of the orchard mistakes that cost many planters dearly. We will be glad to be of any service. The help of our Special Service Department is yours for the asking.

Stark Bro's Nurseries & Orchards Co.

Louisiana, Missouri. Lock Box 12 A.

Big Doings in Hood River

The city is grading the streets in the business district preparatory to paving. Six miles of new macadam road is nearly completed. The municipal water system will soon be under way. Several business blocks are under construction, including an up-to-date opera house. New warehouses for storing fruit are being built along the railroad. Many fine new houses in the town and valley are under construction.

Hood River is a live district with something doing all the time. If you want to better yourself come here and we will tell you how to do it. We have good bargains in city and orchard property.

J. H. HEILBRONNER & CO.

THE RELIABLE DEALERS

HEILBRONNER BUILDING

HOOD RIVER, OREGON

TREES THAT BEAR

Here are four-year-old Jonathans in the 40-acre orchard of F. A. Williams, two miles west of Toppenish. Trees purchased of Washington Nursery Company. (Photo taken September, 1911.)

It's too bad the camera doesn't take a red apple as well as it does something white or black.

This tree in the foreground was loaded with the finest Jonathan apples you'd find in a month's travel, and it's only one of scores of Jonathans in this same orchard, and this, too, in a year when a general 50 per cent crop of apples is as big as could be found, and many orchards with far less.

The Rome Beauties in this same orchard were also splendidly loaded.

This is only one of hundreds of orchards of our trees planted all over the Northwest during the past eight years. The proof of the merits of our stock is found in its hardy, well-matured, sturdy nature, and in its rapid growth in any proper soil in any climate. The reason for this lies in the conditions under which our trees are grown. Months of continuous sunshine—soil of unsurpassed fertility—moisture when needed, none when not—continuous cultivation—and finally cool nights, with frost in the air in September and on till digging time. All this is what makes a Washington Nursery tree the envy of the less fortunate grower in other localities, for the stock is big and well calipered and splendidly rooted and matured.



WATCH THE GRADES

We grade our trees from where the bud leaves the scion—not from the union—and in this way you, the purchaser, get about one grade better than under the wrong method of measuring from the union.

WASHINGTON NURSERY COMPANY
TOPPENISH, WASHINGTON

MORE SALESMEN WANTED IN GOOD, UNOCCUPIED FIELDS
WRITE US

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Estimate of 1911 Apple Crop of United States and Canada

From The Packer, August 19, 1911

THE report of the International Apple Shippers' Association, issued by Secretary R. G. Phillips, shows the apple crop in the United States and Canada, based upon reports from the members of the association, to be as follows. (If a state is reported at 175 per cent it means that state has 75 per cent more than a year ago, and if at 60 per cent it has 40 per cent less, if at 100 per cent it indicates a crop of equal proportions, and if at 200 per cent a crop twice as large is indicated.) Percentage compared with 1910 crop:

New England Group	Percent	Quality
Maine	115	Fair to good
New Hampshire	50	Fair to good
Vermont	100	Fair to good
Massachusetts	75	Fair to good
Rhode Island	150	Fair
Connecticut	60	Fair
Central Group		
New York	150	Good
New Jersey	180	Good
Pennsylvania	135	Good
Ohio	140	Poor to good
Michigan	250	Fair to good
Wisconsin	500	Fair to good
Southern Group		
Maryland	150	Fair to good
Virginia	45	Fair to good
West Virginia	110	Fair to good
Kentucky	75	Poor
Tennessee	75	Fair
Middle Western Group		
Indiana	125	Fair to good
Illinois	170	Poor to good
Minnesota	500	Good
Missouri	200	Poor to good
Arkansas	100	Fair to good
Iowa	300	Fair to good
Nebraska	130	Fair to good
Kansas	60	Poor to good
Oklahoma	150	Fair to good
Pacific Coast Group		
Colorado	180	Good
Utah	125	Good
Idaho	100	Good
Washington	70	Good
Oregon	60	Good
California	85	Good
New Mexico	200	Good
Canada		
British Columbia	85	Good
Ontario	175	Fair to good
Nova Scotia	300	Fair to good

An examination of the report of Secretary R. G. Phillips will show as follows:

New England Group—Decreases are noted, especially in New Hampshire and Massachusetts, with a substantial increase occurring only in the unimportant State of Rhode Island. This group as a whole, however, indicates a decline from last year of from 15 to 18 per cent.

The Central Group—This large and very important group shows a most substantial increase throughout, with quality generally good and better than for some time. This group indicates an increase from last year of more than 60 per cent.

The Southern Group—A decline will occur in this section, due to a falling off in the important State of Virginia.

This decline will to a considerable extent be offset by the excellent showing in Maryland and the prospect in West Virginia, Kentucky and Tennessee being unimportant factors. The group as a whole indicates a decrease of a little more than 20 per cent.

The Middle Western Group—This very important section, with the sole exception of Kansas, shows a heavy increase over a year ago. This section was generally light last year, and in some states a failure. An increase of 80 to 85 per cent is now indicated for this group.

Features of this Issue

STATISTICS OF THE FRUIT INDUSTRY

APPLE PRODUCTION IN WESTERN UNITED STATES

APPLES EAST OF THE GREAT LAKES

ANALYSIS OF WESTERN SPRAYING METHODS

ORCHARD MANAGEMENT AND APPLE GROWING IN NEW ENGLAND

SPOKANE NATIONAL APPLE SHOW

Pacific Coast Group—The important States of Washington and Oregon show a considerable decrease over a year ago, with California showing a lighter decrease and Colorado a very substantial increase. Taking the section as a whole, and including New Mexico, which this year has a very favorable promise, this group now indicates a decrease of from 5 to 10 per cent.

Canada—The important eastern sections, including the Provinces of Ontario and Nova Scotia, show a very substantial increase over last year, amounting to fully 100 per cent, with generally good quality.

Quality—The only complaint of importance is on size in parts of the Southern and Middle Western groups, and varying even here from under to normal, in other respects good. With sufficient rainfall the matter of size should be largely remedied. Diseases, worms, etc., are under better control than ever, and care and spraying have increased greatly. On the whole a good quality is indicated.

Quantity—Declines are shown in New England, the Southern and Pacific Coast groups. The great Central and Middle Western groups show large increases, together with the Provinces of Ontario and Nova Scotia. In the United States there is now in sight fully 30 per cent more apples than a year ago, or more than 4,000,000 barrels of commercial fruit more than a year ago. Canada indicates an increase of more than 1,300,000 barrels, making for the two countries practically 5,500,000 barrels in excess of a year ago, or around 35 per cent of increase.

As bearing upon this year's deal, the exports from the United States and Canada during the last two years are important. The figures compiled by the Canadian government and United States statisticians vary, a large part of it caused no doubt by Canadian apples passing through the port of Portland, Maine. The Canadian figures show a decrease in exports from that country in 1910-11 over 1909-10 of 1,080,819. Figures compiled in New York show the decrease at 884,798. The short crop in Ontario and Nova Scotia last year accounts for this decrease. This year these provinces have sufficient fruit in sight at this time to bring Canadian exports back to the normal level. The exports from the United States increased last year between 400,000 and 650,000 barrels, largely because of the Canadian shortage, and afforded the needed assistance to carry the deal through safely. The ice was exceedingly thin last year and bent badly at times.

It should be borne in mind that last year the shortage of early fruit in the Central group allowed such states as Virginia to clean up early and started winter fruit from all sections into consumption at an unusually early date. This year there are large quantities of early and fall fruit to be first consumed. Your attention is also called to the fact that there are apples in every state where there are trees. There is no failure in any section. There is now in sight far more than enough of everything to go around and conservative views should prevail. The figures we have given are most conservative; they are understated in many instances, and with normal conditions from now on the crop will increase rather than decrease. Rains have fallen generally over the country and conditions may be said to be very favorable.



General Statistics About the Fruit Industry and Sources from which Obtained

Collected by J. C. Skinner, Secretary of the Hood River Commercial Club, credit being given to the various sources from which the information was obtained

PRODUCTION OF APPLES IN THE UNITED STATES, BY STATES, IN 1889 AND 1899, AND NUMBER OF TREES OF BEARING AGE IN 1890 AND 1900, AS REPORTED BY THE ELEVENTH (1890) AND TWELFTH (1900) CENSUSES

State or Territory	Trees of bearing age 1890		Production 1889		Trees of bearing age 1900		Production 1899		Production 1911	
	Number	Bushels	Number	Bushels	Number	Bushels	Number	Bushels	Number	Bushels
Maine	3,003,109	3,071,451	1,184,781	1,421,773	2,610,000	2,610,000	2,610,000	2,610,000	2,610,000	2,610,000
New Hampshire	1,714,779	2,283,317	2,031,398	1,978,797	1,571,000	1,571,000	1,571,000	1,571,000	1,571,000	1,571,000
Vermont	1,728,096	2,213,005	1,675,131	1,776,822	1,382,000	1,382,000	1,382,000	1,382,000	1,382,000	1,382,000
Massachusetts	1,697,551	1,690,110	1,852,016	3,023,136	1,476,000	1,476,000	1,476,000	1,476,000	1,476,000	1,476,000
Rhode Island	207,230	239,367	213,598	339,115	132,000	132,000	132,000	132,000	132,000	132,000
Connecticut	1,111,757	1,993,724	1,167,312	3,708,931	1,545,000	1,545,000	1,545,000	1,545,000	1,545,000	1,545,000
New York	11,128,381	8,493,816	15,054,832	20,111,257	11,100,000	11,100,000	11,100,000	11,100,000	11,100,000	11,100,000
New Jersey	1,310,705	603,890	1,810,793	1,640,896	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Pennsylvania	9,097,500	7,552,710	11,771,211	21,060,451	376,500	376,500	376,500	376,500	376,500	376,500
Delaware	310,648	109,611	567,618	702,920	889,500	889,500	889,500	889,500	889,500	889,500
Maryland	1,297,239	1,110,113	1,821,183	3,150,673	2,114,706	2,114,706	2,114,706	2,114,706	2,114,706	2,114,706
District of Columbia	1,742	1,169	1,253	283	10,960	10,960	10,960	10,960	10,960	10,960
Virginia	1,253,361	8,391,125	8,190,025	9,835,982	1,162,500	1,162,500	1,162,500	1,162,500	1,162,500	1,162,500
West Virginia	2,870,535	1,139,978	5,111,112	7,495,743	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000
North Carolina	6,249,468	7,591,511	6,138,871	6,662,751	530,976	530,976	530,976	530,976	530,976	530,976
South Carolina	321,137	135,181	691,700	251,728	370	370	370	370	370	370
Georgia	1,315,501	2,113,055	2,359,975	670,889	77,798	77,798	77,798	77,798	77,798	77,798
Florida	7,025	2,610	8,219	1,866	40,116	40,116	40,116	40,116	40,116	40,116
Ohio	10,860,013	13,789,278	12,952,625	20,617,180	5,820,000	5,820,000	5,820,000	5,820,000	5,820,000	5,820,000
Indiana	6,089,106	8,781,038	8,621,593	8,620,278	2,079,000	2,079,000	2,079,000	2,079,000	2,079,000	2,079,000
Illinois	6,949,436	9,600,785	13,130,006	9,178,150	5,808,000	5,808,000	5,808,000	5,808,000	5,808,000	5,808,000
Michigan	8,582,386	13,151,626	10,927,899	8,931,569	5,322,000	5,322,000	5,322,000	5,322,000	5,322,000	5,322,000
Wisconsin	1,383,070	1,591,547	2,557,265	303,373	1,902,000	1,902,000	1,902,000	1,902,000	1,902,000	1,902,000
Minnesota	165,294	80,131	875,905	120,113	2,793,000	2,793,000	2,793,000	2,793,000	2,793,000	2,793,000
Iowa	3,640,588	5,040,352	6,869,588	3,129,862	1,035,500	1,035,500	1,035,500	1,035,500	1,035,500	1,035,500
Missouri	8,150,112	8,698,170	20,040,399	6,196,436	120,152,795	143,105,689	201,591,642	175,397,600	61,502,500	61,502,500

Attention is called to the right-hand column. The increased setting of apples began as far back as 1882 and has continued in many states annually. Please note the decreased production in the estimate for 1911 of the different states. Maine and Rhode Island are the only states that show an increased estimate for 1911 as compared with the production in 1899, among the states east of the Rocky Mountains. Missouri is reported as having 20,040,399 bearing trees, with an estimate for the year 1911 of 1,033,500 bushels. Of course this is an off year, but if you consider 1911 an off year you might as well consider 1905, 1906, 1907, 1908, 1909 and 1910 off years, as the general production in the United States was not much greater in any one of these years. In 1889 the United States had 120,152,795 apple trees of bearing age, which produced 143,105,689 bushels, about one and one-sixth bushels per tree. In 1899 the United States contained 201,591,642 trees and produced 175,397,600 bushels, or three-quarters of a bushel per tree. While the number of trees is not known for the year 1910, it is probably safe to estimate that the number has increased as much or even more from 1899 to 1910, which would probably mean that there are 300,000,000 apple trees. Yet in the year 1910, according to the following table, the crop amounted to 23,825,000 barrels or 71,475,000 bushels, which would make the average production per tree one-quarter of a bushel. All of these statements are simply conclusions from the statistics published herewith, which you can figure out for yourselves. It seems evident that any orchard district or any state which averages from only seven-eighths of a bushel in the year 1899 to one-quarter of a bushel in

the year 1910 is not a paying proposition, and it seems evident also that the following conclusion must be drawn by any individual who will take the pains to carefully study these statistics that there must be an immense area planted to apples throughout the United States which from 1899 to 1910 has been a losing proposition. This is a self-evident fact. What may be the cause is another matter, but it is evident that there are causes in many sections to account for this small average. In other words, the soil is not suited to apple culture, climatic conditions are not right, or the orchards have received a woeful lack of attention. It may be any one or two of these three or all three combined. There are many sections and some states where the trees have averaged from five to ten bushels per tree, such being the case in many districts throughout the Northwest, and if this is true it also must be evident that many sections and some states have produced far less than the average part of a bushel per tree, which has varied from seven-eighths to one-quarter of a bushel during the last eleven years. In conclusion, each state, each district will be forced in the future to work out the problem for itself as to whether apple growing is a remunerative industry or whether it is conducted with a financial loss. All states in the Union are not adapted to the production of all products of the soil. Southern states are celebrated for their cotton and sugar. The Middle Western states for grain and corn. Some states are adapted to general farming, and only portions of all the states are adapted to fruit growing, the necessary combination of soil and climate being found in somewhat limited areas.

APPLE CROPS, EXPRESSED IN BARRELS, OF THE UNITED STATES, BY STATES, FROM 1899 TO 1910, INCLUSIVE

CENSUS ESTIMATE																									ESTIMATE OF AMERICAN AGRICULTURIST										FROM DEPARTMENT OF AGRICULTURE									
State	1899	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922																			
Maine	57,200	830,000	950,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000																				
New Hampshire	650,000	1,100,000	1,200,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000																				
Vermont	302,000	500,000	500,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000																				
Massachusetts	1,000,000	1,500,000	1,500,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000																				
Rhode Island	100,000	150,000	150,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000																				
Connecticut	1,000,000	1,500,000	1,500,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000																				
New Jersey	8,020,000	2,250,000	5,500,000	1,100,000	3,300,000	3,800,000	4,150,000	2,100,000	3,750,000	3,300,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000																				
Pennsylvania	6,872,000	2,220,000	6,350,000	1,500,000	3,500,000	3,100,000	3,275,000	1,800,000	3,750,000	3,300,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000																				
Delaware	2,977,000	3,150,000	3,800,000	1,900,000	3,400,000	3,260,000	3,515,000	1,800,000	3,500,000	3,500,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000																				
Ohio	2,873,000	2,100,000	2,100,000	1,250,000	1,100,000	980,000	750,000	510,000	1,000,000	600,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000																				
Michigan	1,059,000	2,230,000	2,110,000	1,150,000	2,100,000	921,000	632,000	525,000	2,100,000	850,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000																				
Wisconsin	2,165,000	2,000,000	2,250,000	2,150,000	1,100,000	166,000	600,000	100,000	2,275,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000																				
Illinois	1,071,000	1,100,000	1,100,000	1,150,000	1,000,000	150,000	510,000	360,000	125,000	150,000	375,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000																				
Minnesota																																												
Iowa																																												
Arkansas																																												
Colorado																																												
Idaho																																												
Utah																																												
Montana																																												
California																																												
Oregon																																												
Washington																																												
West Virginia																																												
Virginia																																												
Maryland																																												
Kentucky																																												
Tennessee																																												
All other																																												
United States	58,166,000	37,160,000	56,820,000	26,950,000	10,625,000	12,626,000	15,360,000	24,310,000	38,280,000	29,510,000	25,850,000	25,115,000	23,825,000	22,400,000	21,100,000	20,000,000	19,000,000	18,000,000	17,000,000	16,000,000	15,000,000	14,000,000	13,000,000	12,000,000																				

NUMBER AND AGE OF APPLE TREES IN HOOD RIVER

	Top 15 to 25 grafts	1 1/4	1 1/2	2	3	4	5	6	7	8	9	10	11	12	13	14
Yellow Newtown	50,554	39,582	32,862	29,918	33,818	38,088	33,818	33,818	33,818	33,818	33,818	33,818	33,818	33,818	33,818	33,818
Spitzenberg	115	536	120	599	1,474	1,375	1,474	1,375	1,474	1,375	1,474	1,375	1,474	1,375	1,474	1,375
Ben Davis	81	1,280	872	1,437	1,883	1,483	1,883	1,483	1,883	1,483	1,883	1,483	1,883	1,483	1,883	1,483
Jonathan	1,683	1,883	1,483	1,883	1,483	1,883	1,483	1,883	1,483	1,883	1,483	1,883	1,483	1,883	1,483	1,883
Baldwin	56	1,390	427	325	1,390	427	325	1,390	427	325	1,390	427	325	1,390	427	325
Arkansas Black	35	13	218	117	388	196	196	388	196	196	388	196	388	196	388	196
Missouri Black	15	13	218	117	388	196	196	388	196	196	388	196	388	196	388	196
Thompson's Co. King	15	13	218	117	388	196	196	388	196	196	388	196	388	196	388	196
Hayes Keeper	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Stark	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Gano	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Winnesap	279	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Gravenstein	313	20	96	136	150	150	150	150	150	150	150	150	150	150	150	150
Winter Banana	313	20	96	136	150	150	150	150	150	150	150	150	150	150	150	150
Salome	37	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Red Cheek Pippin	25	95	836	585	1,981	872	1,065	988	675	2,269	506	1,065	988	675	2,269	506
Yakima	25	95	836	585	1,981	872	1,065	988	675	2,269	506	1,065	988	675	2,269	506
Wagner	25	95	836	585	1,981	872	1,065	988	675	2,269	506	1,065	988	675	2,269	506
Northern Spy	741	556	836	585	1,981	872	1,065	988	675	2,269	506	1,065	988	675	2,269	506
Mixed apple orchard	741	556	836	585	1,981	872	1,065	988	675	2,269	506	1,065	988	675	2,269	506
Totals	94,250	77,802	66,198	38,206	33,480	10,509	3,111	10,340	7,975	11,892	3,891	12,217	1,775	11,892	3,891	12,217
Grand total	377,676															

California Fruit, Vegetable and Wine Statistics

From Report of California Development League for 1911

EXPORTS by sea of California fruit and vegetables from San Francisco to foreign countries:

	Amount	Value
Prunes, pounds	36,586,765	\$2,117,652
Raisins, pounds	6,146,480	307,133
Apricots, pounds	4,988,215	562,622
Peaches, pounds	3,053,735	132,047
Apples, dried, pounds	1,522,954	121,836
Apples, green, boxes	20,683	41,366
Oranges, boxes	16,694	38,858
Fruits	153,835	153,835
Canned fruit, cases	598,630	1,795,890
Nuts	152,479	152,479
Beans, cases	33,703	108,672
Onions, cases	26,853	22,929
Potatoes, cases	51,527	40,852
Vegetables, canned	289,788	289,788
Vegetables, all other	61,305	61,305

Exports by sea of California fruit, vegetables and wine from San Francisco to other states and non-contiguous territory:

	Amount	Value
To Alaska		
Fruit, dried and green, pounds	835,543	\$ 27,050
Fruit, canned and pressed, cases	758	32,198
Nuts		8,291
Dairy produce		129,270
Vegetables		14,403
Wine, cases	8,485	7,115
To Tutuila		
Fruit, dried and green		38
Fruit, canned, cases	880	3,641
Dairy products		283
Vegetables		1,571
Wine, gallons	146	165
To Atlantic States		
Fruit, dried, pounds	23,372,837	918,225
Fruit, canned, cases	371,221	1,113,663
Wine and brandy, gallons	8,421,288	2,575,592
Beans, pounds	11,172,251	670,335
To Hawaii		
Fruits, green, dried and canned, pounds	4,123,045	225,957
Dairy products		379,172
Vegetables		220,202
Wine, gallons	866,311	350,859
To Oregon and Washington		
Fruits, green, dried and canned, pounds	9,879,000	765,000
Vegetables		900,000
Dairy produce		150,000

The shipments of citrus fruits from California for the season November

1, 1909, to October 31, 1910, while nearly 9,000 carloads less than the one ending 1909, were yet greater than in any year previous. They totaled 33,099 carloads, of which 25,331 carloads of oranges and 4,674 carloads of lemons went from south of Tehachapi. The balance, 2,789 carloads, went from Central and Northern California. The Tulare district sending 2,220 carloads of oranges and 110 carloads of lemons; the northern district furnished the rest, 439 carloads. The shipments were by freight and exclusive of what was marketed within the state and those shipped East by express. The development of the citrus industry in California, which now amounts to between 13,000,000 and 18,000,000 boxes, is nearly three times as great as all the other states combined. The fruit distributing associations and others furnish statistics of shipments of deciduous fruits to Eastern markets for the year 1910, as given in the table herewith. As the varieties are shown they add to the value of the tables of shipments. The figures are for actual carloads without regard to tons in a car. The minimum fixed by the railway companies now is fifteen tons, but a carload is often thirty tons. Shipments from north of Tehachapi, 1908-10:

Varieties	1908	1909	1910
Cherries	208 1/4	250	250
Apricots	231 3/4	210	290
Peaches	1,980 1/4	2,599	2,518
Plums and prunes	1,763	1,526	1,552
Pears	2,701 1/2	2,638	2,361
Grapes	3,816 1/4	5,880	4,948
Apples	2,216	2,188	2,153
Totals	12,917	15,261	11,072

TABLE A—OUTPUT OF DRIED FRUITS, IN TONS, NOT INCLUDING PRUNES AND RAISINS, FOR THE YEARS 1900 TO 1910

Year	Peaches	Apricots	Apples	Pears	Plums	Nectarines	Grapes	Figs
1900	17,170	14,000	3,150	7,275	1,950	435	240	2,000
1901	14,755	7,776	3,225	3,290	1,725	317	180	3,260
1902	25,210	18,762	4,875	2,625	1,280	455	188	3,625
1903	16,075	10,500	1,800	2,325	1,435	317	205	3,000
1904	11,500	8,500	1,500	1,750	1,150	210	170	2,850
1905	17,500	19,250	3,250	1,750	930	185	193	3,625
1906	11,250	3,250	2,750	3,500	1,100	170	200	3,375
1907	12,000	1,500	1,500	500	750	137	188	3,000
1908	22,500	19,000	3,000	1,200	1,000	350	1500	3,000
1909	20,000	14,500	2,500	1,250	500	375	325	3,500
1910	25,000	16,000	3,100	1,000	375	250	350	3,775

TABLE B—IMPORTS AND EXPORTS OF CALIFORNIA RAISINS AND OTHER CURED FRUITS AND ORANGES, 1905 TO 1910

	1905	1906	1907	1908	1909	1910
Imports						
Raisins, pounds	11,511,347	4,537,643	9,927,771	4,875,693	5,219,649	3,022,918
Exports						
Raisins, pounds	3,978,645	9,749,690	4,720,606	7,084,178	8,363,845	15,547,074
Apricots, pounds	13,616,010	3,268,457	1,540,471	14,463,948	13,644,135	18,366,055
Peaches, pounds	700,902	1,819,863	1,354,317	1,296,095	2,843,968	4,946,406
Prunes, pounds	34,820,748	31,777,704	37,674,800	18,087,319	83,128,101	64,470,370
Oranges, boxes				714,365	952,869	962,229

TABLE C—OUTPUT OF CALIFORNIA CANNED FRUIT AND BERRIES, IN CASES, FOR THE YEARS 1908, 1909 AND 1910

	1908—All Grades	1909—All Grades	1910—All Grades
	2 1/2s and 3s	2 1/2s and 3s	2 1/2s and 3s
Apples	6,100	7,375	6,280
Apricots	1,035,600	563,660	100,450
Blackberries	43,250	22,625	27,330
Cherries, Royal Ann	100,700	110,250	7,450
Cherries, black	39,200	16,700	1,375
Cherries, white	52,100	51,640	4,520
Grapes	37,620	20,105	4,365
Loganberries	1,029	3,204	808
Nectarines	1,502	171	14
Pears	611,500	466,530	34,910
Peaches, freestone	838,400	401,800	143,375
Peaches, cling	1,240,350	779,725	109,260
Plums	209,300	75,450	13,975
Raspberries	5,365	3,375	215
Strawberries	4,960	9,690	890
Other fruits	272	1,053	635
Total cases	4,227,248	5,074,415	3,242,942
Grand totals		4,734,663	3,047,001

While the above table gives but 2,153 carloads as the total shipments of apples from the state for the year 1910, the secretary of the Watsonville Commercial League places the shipments from Pajaro Valley at 4,000 carloads.

Nearly all kinds of deciduous fruits are dried for the market, but prunes, peaches and apricots are the most important. The dried output of all, except figs, varies largely according to the season, the demand of the Eastern market for fresh fruit and the prices offered by the canners. (See Table A.)

Of dried fruits, prunes come next in importance to raisins. Prunes are grown in many counties throughout the state; the largest center of this industry is the Santa Clara Valley. A good many prunes are grown in the San Joaquin and Sacramento Valleys, and also in Contra Costa and Sonoma Counties. The output varies largely in different years. The most reliable figures place the output for 1910 at 45,000 tons, or half the production of 1906. California prune output, 1897-1910:

Year	Tons	Year	Tons
1897.....	48,810	1901.....	67,500
1898.....	45,210	1905.....	37,500
1899.....	56,863	1906.....	90,000
1900.....	87,000	1907.....	40,000
1901.....	40,800	1908.....	25,000
1902.....	98,500	1909.....	77,500
1903.....	82,500	1910.....	45,000

The accompanying exhibit is of some interest in this connection as showing the trend of trade in dried fruits. (See Table B.)

The quantity of fruit which is exported depends to a certain extent on the size of the crop. For example, the prune crop for 1910 is estimated at about 74,000,000 pounds, as compared with 150,000,000 the previous year, which was one of the largest on record. The apricot crop also varies greatly.

The canning of fruit and vegetables is an important industry in California, and the yearly output of canned goods is very large. The aggregate number of cases of all kinds of fruit and berries canned in 1909 was nearly a million and three-quarter cases less than in 1908, but was larger than for any previous year. The demand for fresh fruit at home and for shipping takes a large quantity of fruit that would otherwise go to the canner.

The accompanying exhibit, by courtesy of the "California Fruit Grower," is made of the various kinds of fruit canned in 1908, 1909 and 1910. (See Table B.)

It is given by same authority that the aggregate amount of canned fruit and berries for 1910 amounted to 4,058,549 cases.

The following table shows the production of canned fruits during the last ten years:

Year	Cases	Year	Cases
1901.....	2,677,082	1906.....	3,109,225
1902.....	2,252,790	1907.....	2,982,985
1903.....	2,783,504	1908.....	4,734,663
1904.....	2,840,614	1909.....	3,047,001
1905.....	3,283,296	1910.....	4,008,549

California is easily the most important factor in viticulture in the United States, and grape culture is one of the most widespread industries in the state, 342,519 acres, according to the State Board of Equalization, being devoted

to the industry, of which 160,573 acres are in wine grapes, 128,217 acres in raisin grapes and 53,729 acres in table grapes, which is being increased every year, especially of table grapes. All varieties of the European grapes are included, besides many California developments therefrom. The annual value of the grape product, including table grapes, dried grapes and raisins, and wine and brandy, aggregates over \$25,000,000. The shipments of table grapes out of the state by rail for 1910 amounted to 4,948 carloads. The center of the raisin industry is in Fresno County, although raisins are produced in other parts of the state. The crop varies from year to year, as the appended table shows; that for 1910 exceeds the average of the six preceding years. California raisin crop for fourteen years:

Year	Tons	Year	Tons
1897.....	46,852	1904.....	37,500
1898.....	40,365	1905.....	43,750
1899.....	35,784	1906.....	47,500
1900.....	47,167	1907.....	60,000
1901.....	37,125	1908.....	60,000
1902.....	54,375	1909.....	70,000
1903.....	60,000	1910.....	56,000

Following is the raisin product, in pounds, of twelve California counties for 1909:

Fresno	83,404,000
Tulare	20,000,000
Kings	18,000,000
Sutter	4,500,000
San Bernardino	3,600,000
San Diego	3,200,000
Madera	2,400,000
Yolo	2,000,000
Kern	1,100,000
Colusa	900,000
Los Angeles	600,000
Riverside	296,000
Total crop	140,000,000

The above figures show that Fresno County now produces about sixty per cent of the California raisin crop, and nearly twice the quantity produced by Spain, which produces from 15,000 to 30,000 tons and has held the lead for centuries. It was in 1892 that the California raisin crop first equaled that of Spain, and it has been increasing the difference ever since.

Fresno County is the center of the seeded raisin industry, where it originated. The following figures show in tons the wonderful increase in this popular form of raisin during the last fourteen years:

Year	Tons	Year	Tons
1896.....	700	1903.....	18,000
1897.....	3,500	1904.....	18,000
1898.....	7,000	1905.....	21,000
1899.....	12,000	1906.....	24,000
1900.....	14,000	1907.....	26,000
1901.....	14,000	1908.....	24,000
1902.....	16,000	1909.....	28,000

The above figures are only approximate.

The aggregate wine and brandy production for 1910, with an excess of 500,000 gallons in case of dry wine and of 500,000 gallons in case of brandy, was more than for 1909, which exceeded all previous years. The production in 1909 of sweet wine was the greatest in the history of the industry by 2,500,000 gallons, and 1910 kept pace with it. The output of dry wine was well above the normal by near 7,000,000 gallons. The following table shows the product of wine and brandy in gallons for the last fourteen years:

Year	Dry Wines	Sweet Wines	Brandy
1897.....	28,736,400	5,197,500	1,412,468
1898.....	10,750,000	7,779,000	1,250,000
1899.....	15,103,000	8,330,000	1,699,035
1900.....	16,737,260	6,940,300	3,256,513
1901.....	16,473,731	6,270,300	1,688,482
1902.....	28,224,146	14,835,146	4,564,173
1903.....	21,900,500	12,670,356	1,972,000
1904.....	15,589,312	13,571,856	4,420,839
1905.....	20,000,000	10,700,000	1,250,000
1906.....	26,000,000	15,000,000	1,345,000
1907.....	27,500,500	15,500,000	1,500,000
1908.....	22,500,000	14,750,000	1,750,000
1909.....	27,000,000	18,000,000	2,000,000
1910.....	27,500,000	18,000,000	2,500,000

After 1904 brandy used in fortifying sweet wines was excluded.

California wines have a wide and growing market. The railroad shipments go mainly to Eastern points, while those by sea go to the four quarters of the world. In this connection the following exhibit of exports of wine by sea, taken from the Wine and Spirit Review, is of interest:

	Gallons	Value
1908, to 12 countries.....	4,250,799	\$1,657,089
1909, to 23 countries.....	7,440,294	2,386,111
1910, to 26 countries.....	9,866,539	3,162,600

Summary of the values of fruit products for 1910 marketed by the producer and for the most part shipped out of the state, compiled from data gathered from the transportation companies and other authoritative sources:

Orchard Products	Value
Fresh deciduous fruits.....	\$15,479,200
Citrus fruits	32,790,000
Dried fruits, including	
prunes	17,793,000
Canned fruits	10,000,000
Olives and olive oil.....	2,200,000
Nuts	3,375,000—\$81,637,200
Vineyard Products	
Table grapes	4,452,200
Raisins	4,640,000
Wine and brandy.....	25,500,000—34,592,200
Total.....	\$116,229,400

[Editor's Note.—Special attention is called to the volume of business done by California in dried fruits and canned fruits, amounting to \$27,793,000. This should be sufficient evidence to prove beyond question that Oregon and Washington, Idaho and other states in the Northwest are far behind the times in the matter of canning and drying. The Northwest needs canneries and evaporators, and it needs them badly, and the fact that in California this part of the industry amounts to nearly \$28,000,000 certainly should be sufficient evidence.]

EMBRACING the three Counties of Kittitas, Yakima and Benton, the fruit tree census of this famous section shows up as follows: Total number fruit trees 3,330,726, distributed as follows: Kittitas County, 304,206 trees, 4,129 acres; Yakima County, 2,271,538 trees, 28,750 acres; Benton County, 754,892 trees, 8,461 acres.

Total number of trees 3,330,726, divided as follows: Apple, 1,956,680; pear, 499,809; peach, 751,601; miscellaneous, 132,636.

Of the apple trees, the number according to age is as follows: Over six years, 336,554; five years, 106,503; four years, 159,603; three years, 390,299; two years, 496,965; one year, 466,766.

There are in these counties 127,009 acres irrigable, but not in cultivation, a large portion of which can be put to fruit.—From report of Mr. E. F. Benson, secretary of state.

Fruit Tree Statistics of the Famous Yakima Valley

From Yakima Herald, August 12, 1911

A BROADER idea of the value of the fruit trees in the Yakima Valley was obtained Friday by a conservation with J. H. Robbins, general manager of the Yakima Valley Fruit Growers' Association. By Yakima Valley is meant all the fruit growing country in the eastern part of Kittitas County, and all of the fruit lands of Yakima and Benton Counties. Mr. Robbins places the number of fruit trees in the above region at 3,500,000, and their value at ten dollars per tree. He acknowledges that the number of trees is probably much greater than he mentioned, and that their value is much more. Those figures were given merely as a rough basis to show up how valuable the fruit industry has become in this part of the state, while other statistics can easily be obtained to show that it is growing by leaps and bounds. From figures compiled and read at the meeting of the State Horticultural Society held at Prosser last January, the number of fruit trees in the first mentioned region was placed at 3,330,726. No person who is well informed will dispute that there were not more trees set out in this region last spring than would swell the number to more than 3,500,000, for the records of the nurseries will verify the additional number. From the foregoing it would appear that Mr. Robbins estimates the value of the fruit trees alone at \$35,000,000. The number of acres in orchards last January was placed at 41,340, which has been increased to nearly 50,000 acres by this time. Adding the value of the land to that of the trees would make a stupendous total.

To handle the selling and transportation business of such an immense business as that of fruit raising on a gigantic scale, such as partially outlined above, requires a strong company. Right here is where Mr. Robbins gave out some information that may be of profit to those who read it, and it may be of interest to many who have never given the subject much thought. The Yakima Valley Fruit Growers' Association has at the present time fourteen district associations, Broadway having been added within the past few weeks. There are approximately four hundred horticulturists who are signed up members of their different local associations. The central body is composed of two delegates from each local. There is nothing new or original in the plan of organization. It is trying no experiment on fruit growers. It is based on the unit system, the same as that governing some of the California organizations, which have been in successful operation for more than twenty years. The local organizations thresh out their own problems at home, and no single association can cover whole districts and keep its members in harmony. The orchardists of the Spokane district paid the Yakima Valley Fruit Growers'

Association a compliment last week by resolving to organize along similar lines. They are to hold another meeting today, Saturday, to proceed with their organization. Inasmuch as it will be impossible for them to get into shape to handle their own fruit this year, it is believed that they will turn it over to the association here to sell for them, thus becoming for purposes of protection members of this body during the time that will necessarily elapse while they are getting ready for business. In addition to the members who reside in Washington, the local organization has been asked to handle the crops for fruit growers of both Idaho and Oregon. The Idaho fruit men who have come in will form a district association as soon as they possibly can incorporate, and will then be regular members of the association, the same as though they were located

in the Yakima Valley. One feature of the plan of operating the Yakima Valley Fruit Growers' Association, as emphasized by Manager Robbins, is that the work is divided into departments, the head of each of which is master of the work in that line. C. C. White has charge of the sales, with title of sales manager. J. T. Roman is traffic manager. Both of these gentlemen have had years of experience and know their business. Mr. Roman handled 25,000 cars of fruit last season, 13,000 of which were of the cold storage variety. As Robert E. Strahorn, vice-president and manager of the O.-W. R. R. & N. Company, predicts that within the next five or six years this region will be turning out not less than from 25,000 to 30,000 carloads of fruit annually in normal years, it is easy to be seen that it will require considerable ability and a great deal of labor to satisfactorily handle the marketing of the fruit, including the transportation and selling features.

Estimate of Apple Crop this Year

From National League Bulletin, August 1, 1911

SUMMING up the various figures and guesses regarding this season's apple crop, taken in conjunction with figures furnished by the United States government, it would appear that the crop will be around 28,600,000 barrels, as compared with about 23,800,000 for last seasons' crop.

The crop in the Hudson River Valley is variously estimated at from twenty-five to fifty per cent of a normal crop. The drop has been heavy, and recent storms and high winds have done great damage. Quality, however, promises fine both in the Hudson Valley and Western New York.

Over 3,000,000 barrels are expected from New England States, estimated about as follows:

Vermont	474,300
Massachusetts	492,000
Rhode Island	144,000
Connecticut	515,000
Maine	880,000
New Hampshire	524,000

Other estimates show the following number of barrels from the states named:

New York	3,700,000
West Virginia	600,000
Pennsylvania	2,000,000
Ohio	1,910,000
Illinois	1,936,000
Michigan	1,771,000
Kentucky	1,030,000
Iowa	931,000
Delaware	125,500
Maryland	296,500
Virginia	387,500
Wisconsin	634,000
Arkansas	251,000
Missouri	344,500
Kansas	116,000
Indiana	693,000
Tennessee	725,000

The box apple output is shown at over 13,000,000 million boxes. California is expected to furnish about 5,000,000 boxes, Washington 300,000, Colorado about 2,500,000, Oregon 1,100,000 and the balance coming from New Mexico, Idaho, Utah and Montana.

[Editor's Note.—By comparison of the statistics compiled by the editor, which are shown elsewhere in this edi-

tion, you will note a big difference in the output of box apples. California is put down for 5,000,000 boxes, and our estimate is 1,800,000. However, this may be an under-estimate, and they may possibly go to 2,400,000. Washington is put down for 300,000 boxes, and our estimate is 1,800,000. Colorado is down for 2,500,000; our estimate is 1,800,000. However, it is possible that Colorado may exceed this figure. Oregon is put down for 1,100,000 boxes; our estimate is 720,000. The total of the above estimates is 13,000,000, while our estimated total is 6,960,000. It is apparent there is quite a difference. It remains to be seen who is correct. However, we wish to say in reference to our estimate, which may account for the discrepancy, that we only deal with the number of carloads actually shipped out of the above named states, that is, California, Colorado, Utah, Montana, Idaho, Washington and Oregon. Statistics lately compiled indicate that about 16,000 carloads were shipped from the above states last year. The Eastern estimate of the crop shipped from the above named states in 1910 was 18,000 cars. Of those there are only two, Colorado and California, which are claiming over fifty per cent of their crop, which would be 9,000 carloads. If Colorado ships 2,000 carloads more than our estimate of 3,000 and California ships 1,000 more than our estimate, which, we think, will be the limit, it will mean about 12,000 carloads for this year.]

WANTED — Employment by a young man, single, an agricultural college graduate, a specialist in fruit growing. Will accept small wages to start. Address R. W. M., 2219 H Street, Bellingham, Washington.

Apple and Peach Statistics for the State of Utah

Compiled by State Horticultural Commission, Salt Lake City, Utah

REPORT OF FRUIT TREES PLANTED IN UTAH SPRING OF 1911

Counties	Plums and					
	Apples	Peaches	Cherries	Pears	Apricots	Prunes Totals
Utah	145,767	58,779	11,927	5,175	110	221,507
Box Elder	135,000	45,000	8,100	2,400	4,800	200,100
Salt Lake	58,666	20,250	18,508	12,613	128	112,677
Weber	31,254	17,611	5,376	500	4,746	60,534
Cache	23,300	3,000	2,400	720	240	30,860
Washington	150	21,000	.....	360	240	25,200
Emery and Grand	16,200	31,200	840	5,160	120	54,120
Davis	11,743	3,560	2,976	.....	841	19,298
San Pete	17,199	675	90	480	240	18,585
Tooele	9,000	3,030	3,275	275	65	15,945
Millard	3,285	1,688	30	900	30	6,316
Carbon	2,640	1,700	150	1,200	.....	5,790
Rich	2,093	.....	480	390	120	3,383
San Juan	900	1,500	120	240	60	3,120
Iron	428	206	73	43	19	790
Morgan	270	.....	120	60	.....	525
Summit	270	.....	.....	60	.....	349
Totals	558,366	212,232	54,765	30,606	12,059	782,129
Estimate of other counties not reported	.....	.....	.....	.....	.....	10,300
Grand total	.....	.....	.....	.....	.....	792,429

The growing importance of the fruit industry in Utah is emphasized in the above report of the fruit trees planted in the spring of 1911.

About fifty-eight per cent of the total area is planted to apples; about twenty-seven per cent is to peaches, and the balance to cherries, pears, plums and apricots, in the order named. Large gains over 1910 were made in Box Elder, Salt Lake, Cache, Washington, Tooele, Millard, Rich, San Juan and Carbon Counties. Over the state as a whole, however, there is a slight decrease in 1911, compared with 1910, but a considerable increase over every other year in the history of the state.

Fruit Crop Report—From the reports submitted to this office it is evident that the commercial shipments of fruit in

Utah will exceed last year. Following is the estimate of the 1911 crop, as compared with the preceding year:

	1911	1910
Apples	350	337
Peaches	850	805
All other, including pears, plums and small fruits	300	276
Totals	1,500	1,418

While the crop is lighter on the trees than last year, still the orchards on an average have had better spraying, pruning and cultivation than in former years, consequently the fruit will be of better quality and size. This fact, together with the increased area coming into bearing, will make the output larger than last year.

The prospect of prices is also considerably better than the year of 1910, and the net returns to the grower from this year's crop will exceed last year.

Apple Production of the Pacific Coast

BELOW we give the apple production of six Pacific Coast states in carloads for 1910, and the estimated production in carloads and boxes for 1911:

	1910 Carloads	1911 Carloads	1911 Boxes
Oregon	2,025	1,200	720,000
Washington	6,170	3,000	1,800,000
Idaho	1,500	1,000	600,000
California	4,000	3,000	1,800,000
Colorado	1,500	3,000	1,800,000
Utah	340	400	240,000
Totals	15,535	11,600	6,960,000

Eastern reports credited the above states with 18,000 carloads last year. As a rule districts throughout the country are not claiming over from forty to fifty per cent of last year's crop. Colorado, and possibly California, may overrun the estimates given. The general average estimate being fifty per cent of last year's crop, if Eastern statements are correct would mean having shipped 18,000 carloads last year, and if the growers are correct in their fifty per cent estimates that we would have 9,000 carloads. However, a greater production than fifty per cent in some sections justifies us in the belief that 12,000 carloads will be as near correct as it is possible to determine at the present time.

We wish everybody to understand, however, that this is simply an esti-

mate and only refers to the number of carloads that are shipped out of the respective states mentioned above, and does not include the amount used in home consumption in any one of the states, and we wish it understood that we realize the difficulty of making reliable estimates, and it is much harder to get good data from some states than others for reasons too numerous to mention. While we are perfectly sincere in this estimate we must admit that estimates to a great extent are more or less a matter of guess work, and it is not expected or intended that these figures should influence the grower or the buyer, and we cannot refrain from adding that values are not absolutely dependent upon the relations of supply and demand in the United States in the fruit business. European markets are important factors in reference to price, and the manner in which fruit is handled also has much to do with the prices that are paid. For instance, the Bartlett pear crop, while we do not know the output this year, did not vary materially from the output last year from the Northwest states and California, and owing to the fact that growers refused to take cannery offers nearly all of the

crop was sold as fresh fruit, which apparently seemed to crowd the market below its consuming capacity at good prices. Whether or not we are right is a question, but it seems that if the California pear growers had sold a portion of the crop to the canneries and shipped a proper proportion of the crop as fresh fruit that the market on Bartlett pears would not have been so low, and that the California dealers would have realized a great deal more net money.

RETURNING from an exhaustive study of crop conditions in all parts of the state, F. A. Huntley, state horticulturist, announced that this year's fruit crop would be from 40 to 50 per cent as large as last year; when there was an abnormal yield in all varieties. His estimate to Governor Hay, he said, would show Washington's 1911 fruit harvest to total 4,225,000 boxes valued at \$5,765,000. The value of the 1910 crop was \$15,000,000 and the 1909 yield netted the growers \$6,000,000.

His detailed estimate of the 1911 crop follows: 2,000,000 boxes of apples at \$1.50 a box, totaling \$3,000,000; 350,000 boxes pears at \$1.50, adding \$525,000; 500,000 boxes peaches at 50 cents, bringing \$250,000; 200,000 boxes of plums and prunes at 60 cents, bringing farmers \$120,000; 200,000 boxes cherries at \$1, aggregating \$200,000; 300,000 crates strawberries at \$2, totaling \$600,000; 475,000 crates raspberries and blackberries at \$2, bringing \$950,000, and 400,000 baskets grapes at 60 cents, yielding \$120,000.

ORCHARD ACREAGE of the State of Washington December 31, 1908. (This includes acreage estimates in 1906, to which has been added the nursery stock distribution since that time.) From report of F. A. Huntley, horticultural commissioner:

Counties	Pears	Apples
Adams	18	100
Asotin	342	1,184
Benton	296	1,622
Chehalis	25	328
Chelan	535	13,252
Clallam	9	100
Clarke	133	381
Columbia	406	1,326
Cowlitz	208	2,439
Douglas	126	1,464
Ferry	45	244
Franklin	25	138
Garfield	86	737
Island	75	810
Jefferson	74	104
King	232	1,591
Kitsap	273	2,368
Kittitas	60	898
Klickitat	55	9,554
Lewis	33	1,205
Lincoln	80	645
Mason	28	167
Okanogan	178	2,548
Pacific	9	63
Pierce	259	4,263
San Juan	48	647
Skagit	44	992
Skamania	22	369
Snohomish	69	1,245
Spokane	392	10,194
Stevens	176	2,936
Thurston	24	1,267
Wahkiakum	6	224
Walla Walla	189	1,061
Whateam	71	1,758
Whitman	313	3,405
Yakima	5,719	27,938
Miscellaneous	140	2,190
Totals	10,823	101,766

Combined acreage of all fruits in Washington, 206,617 acres.

Fruit Production and Value for State of Oregon

From Chamber of Commerce Bulletin, Portland, Oregon

OREGON as a fruit state is rapidly forging to the front. The state's fruit bearing area was about 40,000 acres; 125,000 acres were planted during the past five years. An ideal climate, soil of great fertility and variety serve to make the production in Oregon of high grade fruits. Hood River took the sweepstakes at the National Apple Show, Chicago, for best apples in 1910.

The fruit yield for 1910, as estimated by the president of the State Board of Horticulture, was as follows:

	Value
Apples, 2,650,000 boxes.....	\$2,500,000
Pears, 292,000 boxes.....	420,000
Peaches, 970,000 boxes.....	185,000
Cherries, 4,600,000 pounds.....	200,000
Dried prunes, 28,000,000 pounds.....	1,680,000
Fresh prunes and plums, 300,000 crates.....	195,000
Apricots, 15,000 boxes.....	10,000
Grapes, 4,500,000 pounds.....	135,000
Strawberries, 10,500,000 pounds.....	577,000
Blackberries, 1,750,000 pounds.....	75,000
Raspberries, 2,250,000 pounds.....	105,000
Loganberries, 4,000,000 pounds.....	165,000
Currants, 425,000 pounds.....	25,500
Gooseberries, 500,000 pounds.....	20,000

Other fruits	35,500
Nuts, 250,000 pounds.....	35,500
Total.....	\$6,662,500

[Editor's Note.—You will note the total output of fruit for Oregon in 1910 was \$6,662,500. We have not at hand the estimate for Washington or Idaho, but probably the three combined would be somewhere near \$20,000,000. Now, these three states have a large fruit area. Please note the volume of business done in the fruit line, recorded in this edition under another article entitled, "California Fruit Statistics From a Report of the California Development Board of 1911," which shows the total output of fruit from California was \$116,229,400. Your attention is called to this fact to assure you what is in store for the fruit industry of the Northwest. The possibilities are certainly great because the Northwest is a wonderful country for fruit, excelled by no other section in the Union.]

Condition of the Fruit Crop in Utah

By J. Edward Taylor, Utah State Horticultural Inspector

FROM the commercial standpoint the present prospects are that Utah will this season produce one of the largest fruit crops in her history. While it is true that there has been considerable damage in some sections from frost, yet the state's output for commercial purposes will exceed the crop of 1910 by about two hundred cars. Most of this gain will be in peaches. The frost did very little damage to the apple crop in any section, but there will not be any very large increase in the production

of this crop. While there is a larger area coming into bearing this is offset by the light crop in the orchards which produced heavily last year.

Commercial shipments for 1910: Apples, 338; peaches, 805; pears, 30; all others, including small fruits, 245; a total of 1,418 cars.

Commercial shipments for 1911 (estimated): Apples, 350; peaches, 1,000; pears, 30; all others, including small fruits, 250; a total of 1,630 cars.

United States Pear Production 1890-1900

From United States Government Census

	1890 Bushels	1900 Bushels		1890	1900
Alabama	22,902	22,656	Tennessee	49,923	43,609
Arizona	535	13,197	Texas	17,034	166,418
Arkansas	12,995	24,503	Utah	6,198	59,982
California	577,444	1,912,825	Vermont	16,101	10,239
Colorado	2,441	19,272	Virginia	51,553	88,400
Connecticut	25,862	41,485	Washington	26,868	78,236
Delaware	26,029	156,208	West Virginia.....	15,406	19,475
District of Columbia.....	530	468	Wisconsin	4,071	1,540
Florida	34,255	83,584	Wyoming .....	.....	3
Georgia	113,868	49,497	Totals.....	3,064,375	6,625,417
Idaho	3,542	25,324			
Illinois	57,090	113,745			
Indiana	157,707	231,713			
Indian Territory.....	.....	2,971			
Iowa	7,812	5,014			
Kansas	18,891	21,978			
Kentucky	118,850	76,940			
Louisiana	3,993	29,405			
Maine	13,141	11,200			
Maryland	60,292	301,702			
Massachusetts	71,559	89,011			
Michigan	194,099	170,702			
Minnesota	96	226			
Mississippi	18,531	36,923			
Missouri	58,683	58,449			
Montana	2	24			
Nebraska	1,114	979			
Nevada	811	903			
New Hampshire.....	19,288	19,341			
New Jersey	80,664	790,818			
New Mexico	1,526	14,777			
New York	588,767	960,170			
North Carolina	33,910	25,251			
North Dakota .....	.....	1			
Ohio	279,831	244,565			
Oklahoma .....	.....	1,968			
Oregon	106,383	112,225			
Pennsylvania	144,534	434,117			
Rhode Island	10,037	12,452			
South Carolina	9,244	20,439			
South Dakota	3	157			

On American continent they are successfully grown through fifty degrees of latitude from Tampico, Mexico. Twenty-five degrees north to Asunción in Paraguay. In the tropic of Capri over three thousand miles in width—cultivation is restricted, however, to Cultivation is restricted, however, to the eastern coast line on account of rainfall. Will produce maximum only with one hundred inches of annual rainfall or more. Most successful in southern coast of the Mexican Gulf, Puerto Banios section of Guatemala, Puerto Cortes district of Nicaragua, Bocas del Torro region of Panama, Puerto Simon district of Costa Rica, Bluefields district of Nicaragua, Columbian Province of Santa Marta, certain portions of Cuba, Jamaica, Dominican Republic, Haiti, Dutch Guiana. Is immune from insect pests and seedless. Planted in rows twelve feet apart will bear about one year from planting and will grow to a height of fifteen to thirty-five feet. Four suckers are allowed to grow, which are pruned to be in four stages of development. But one bunch grows to the stalk, and two hundred hills are allowed to an acre. Average yield about two hundred bunches to the acre. Cost of production ten to fifteen cents per bunch, sells at shipping point for thirty cents per bunch; net profits average about fifty dollars per acre. Land in Mexico at ten to fifteen dollars; clearing and planting, forty to fifty dollars per acre.

THE following letter is probably one of the most significant statements ever published in reference to the future of the fruit industry. If the consumption of fruit in forty-three years increased to 2,000 per cent while the population only increased 270 per cent it certainly looks very favorable for the fruit industry, and particularly so for the apple business, for the reason that during the last sixteen years the crop has gradually decreased:

Corvallis, Oregon, August 4, 1911.
Mr. J. C. Skinner, Hood River, Oregon.

My Dear Mr. Skinner: Your letter to President Kerr, which came during my absence, has been duly referred to this division. In regard to your inquiry will state that taking the period from 1850 to 1897 we find the production and consumption of fruit increased 2,000 per cent, while the population during that time increased 270 per cent. Despite this wonderful increase of fruit production we find that the prices today are higher than in 1850. This must mean that the people are using fruit much more generally than they formerly did. Of course this is especially true with apples and oranges. Fifty years ago there were no fruit sections. Now there are large areas devoted to single crops, such as apples, pears and oranges. Yours sincerely,
C. I. Lewis, chief of division of horticulture Oregon Agricultural College.

THE following is a synopsis of the important features of the banana business as collaborated by Franklin Adams, editor Pan-American Union, in May, 1911:

Three dozen per capita—consumption for 1910. Consumption doubled in the last ten years. One acre will produce 17,000 pounds of bananas; this is one and one-third times as much as corn, three times as much as wheat, two and one-third times as much as oats, three times as much as potatoes, four times as much as rye. Chemical composition of bananas same as potatoes. We consume the common yellow Guineo. There are in all forty species. First importation to United States in 1804.

The Apple Production in Barrels for a Decade

THE number of barrels of apples produced in the United States each year from 1885 to 1910 follows:

Year	Barrels	Year	Barrels
1885	60,500,000	1904	45,360,000
1886	69,000,000	1905	24,300,000
1887	41,000,000	1906	38,280,000
1888	28,500,000	1907	29,540,000
1889	58,500,000	1908	25,850,000
1900	57,000,000	1909	25,415,000
1901	26,970,000	1910	23,825,500
1902	46,625,000	1911*	28,600,000
1903	42,626,000		

The above total certainly presents a field that justifies a great deal of thought and investigation. From the year 1896 to the present date it is quite evident that the crop of apples has been greatly decreasing, the present crop being only about fifty per cent of that year. There must be some cause, because during this period there was a large increased setting. On the other hand, it is probably true that a great many orchardists who averaged less than a bushel to the tree had dug up their orchards. Many such cases are reported. Lack of care, disease and

climatic conditions may be other factors. Whatever the causes may be it is evident that the crop has decreased, which again brings us to the final conclusion that many districts in the apple industry which do not pay will go out of business, and we believe the law of supply and demand, or call it nature, if you will, will regulate the quantity of apples necessary to meet the market demands. Should the production be increased sufficiently in quantity to lower prices then it would become a survival of the fittest, which means if over-production does come that it would be simply temporary.

ORANGES.—California orange output: 1905-1906, 22,175 cars; 1906-1907, 23,986 cars; 1907-1908, 24,538 cars; 1908-1909, 31,895 cars; 1909-1910, 30,093 cars. About 384 boxes to car.—Pacific Fruit World, November 5, 1910.

Florida orange production: 1906, 3,465,357 boxes; 1907-1908, 4,314,027

boxes; 1908-1909, 5,000,100 boxes; 1909-1910, 6,000,000 boxes, approximate; 1910-1911, 3,750,000 boxes, approximate. —Biennial reports Florida Commissioner of Agriculture and Florida Fruit and Produce News.

We cannot help but draw a conclusion from the above statement. A few years ago Florida was the only producing orange section in America, and in 1910-11 produced 3,750,000 boxes. A few years ago 1,400 cars was considered an over-production in the orange output from California. During the season 1909-1910 the output was 30,093 cars. This shows an immense increase in Southern California from 1,400 cars to 30,000 cars in a very few years, while the Florida output has remained nearly the same, yet there is no over-production in oranges. At 384 boxes to the car the orange output from California would mean 11,555,712 boxes, compared with the Florida production during the same year of 6,000,000 boxes, or about twice as much. In the season 1910-1911 the California output would be about three times as great.

Apple Production in Western United States

Paper by S. A. Beach, read at meeting of National Apple Shippers' Association, August 4, 1910

WE are asked to consider at this time apple production in the Western United States with regard to its present status and future development. The territory as outlined extends from Lake Michigan, the east boundary of Illinois, and the Mississippi River westward to the Pacific ocean, and from Canada to Mexico. It extends about nineteen hundred miles east and west, seventeen hundred miles north and south, and comprises over sixty per cent of the area of the United States. It is drained by the largest rivers of the continent. It includes broad fertile valleys, wide extending plains, elevated plateaus and vast ranges of lofty mountains, with their accompanying foothills. It includes narrow coast valleys, which are continually veiled with fogs and low-hanging clouds, and also the great desert and semi-arid regions, portions of which already have been brought under irrigation, while other portions are rapidly being included within the irrigated areas. An extensive and rapidly growing literature on the subject of apple growing in this Middle and Far West already abounds in reports, bulletins and other publications of the various state experiment stations, the United States department of agriculture, state and district horticultural societies, fruit growers' associations, organizations of shippers and dealers in fruit, commercial clubs, railroad companies, newspaper and magazine articles, horticultural periodicals and books. It is evident that only a brief outline of this subject can be here presented.

First notice what states and sections of this region are engaged in apple growing and their relative importance. That portion of this territory in which

the apple production reached one thousand bushels per county, as mapped in the United States census report for 1900, may be approximately outlined as including the southern half of Wisconsin, the southeastern quarter of Minnesota, the southeast corner of South Dakota, Illinois, Iowa, Eastern and Southeastern Nebraska, Missouri, Eastern Kansas, Arkansas, excluding the southeast corner, Eastern Oklahoma, Northern Louisiana and the northeast corner of Texas, a few widely separated localities of comparatively limited extent in the mountain regions of New Mexico, Colorado, the Black Hills, Montana, Idaho, Utah, Arizona and a practically continuous area from Southern California northward along the coast and interior valleys of Western California and Oregon through the Puget Sound region and the valley of the Columbia River to the Canadian line. Doubtless the census report for 1910 will show that during the last decade apple growing has been extended considerably beyond the limits here outlined.

It is well to note that in thus defining the apple regions of this part of the continent the unit of production adopted as a basis is not large. The crop of one thousand bushels which would be required in order to bring a county within this category could be borne on one hundred trees yielding ten bushels per tree. However, the fact that so small a yield as this brings a county within the so-called apple regions of the country serves to call attention all the more emphatically to the practical absence of apple orchards in vast areas extending from the Gulf Coast of Texas and from Mexico and Southern California northward through the plains and mountains to the north-

ern boundaries of the continent, which are shown on the above mentioned map as being excluded from apple growing territory. Turning now to a consideration of individual states, it is found that when ranked according to the yield of apples reported in the 1900 census they stand in the order given below:

States	Bushels
1. New York	24,111,257
2. Pennsylvania	24,060,651
3. Ohio	20,617,480
4. Virginia	9,835,982
5. Illinois	9,178,150
6. Michigan	8,931,569
7. Indiana	8,620,278
8. West Virginia	7,495,743
9. Missouri	6,496,436
10. Kentucky	6,057,717
11. Tennessee	5,387,775
12. North Carolina	4,662,751
13. New Jersey	4,610,896
14. Connecticut	3,708,931
15. California	3,488,208
16. Kansas	3,214,407
17. Maryland	3,150,673
18. Iowa	3,129,862
19. Massachusetts	3,023,436
20. Arkansas	2,811,182
21. New Hampshire	1,978,797
22. Maine	1,421,773
23. Nebraska	1,343,497
24. Vermont	1,176,822
25. Washington	728,978
26. Oregon	873,980
27. Alabama	719,175
28. Delaware	702,920
29. Georgia	670,889
30. Texas	591,985
31. Rhode Island	339,445
32. Wisconsin	303,373
33. Colorado	257,563
34. South Carolina	251,728
35. Mississippi	249,035
36. Idaho	223,662
37. Indian Territory	222,565
38. Utah	189,882
39. New Mexico	142,332
40. Minnesota	120,143
41. Oklahoma	111,235
All other states	158,463

Total for United States.....175,397,626

Perhaps the best available statement of the crops in more recent years is that published by the American Agriculturist in its year book. It reports the yields for 1905, 1907 and 1909, as given in bushels, in the following table:

New England States			
	1905	1907	1909
Maine	1,890,000	5,100,000	2,250,000
New Hampshire	1,500,000	2,400,000	1,200,000
Vermont	1,050,000	2,250,000	600,000
Massachusetts	1,575,000	1,800,000	1,080,000
Rhode Island	300,000	300,000	300,000
Connecticut	1,350,000	1,200,000	600,000
Totals	7,665,000	13,050,000	6,030,000
Middle States			
New York	9,990,000	13,950,000	10,200,000
New Jersey	2,250,000	1,200,000	900,000
Pennsylvania	6,300,000	9,000,000	4,800,000
Delaware	450,000	450,000	450,000
Ohio	2,850,000	5,400,000	3,150,000
Michigan	5,400,000	5,700,000	5,550,000
Wisconsin	300,000	600,000	750,000
Totals	27,510,000	36,300,000	25,800,000
Central Western States			
Indiana	1,530,000	1,800,000	1,350,000
Illinois	1,575,000	2,550,000	1,800,000
Missouri	1,200,000	1,200,000	1,620,000
Kansas	1,080,000	375,000	825,000
Nebraska	600,000	420,000	1,050,000
Iowa	1,095,000	1,050,000	1,500,000
Arkansas	1,650,000	900,000	1,050,000
Totals	8,730,000	8,595,000	9,195,000
Western States			
Colorado	720,000	750,000	1,350,000
Idaho	300,000	600,000	300,000
Utah	270,000	450,000	300,000
Montana	75,000	150,000	180,000
California	2,850,000	3,000,000	3,300,000
Oregon	1,200,000	1,650,000	750,000
Washington	1,170,000	1,425,000	1,125,000
Totals	6,585,000	8,025,000	7,305,000
Southern States			
West Virginia	2,700,000	1,950,000	1,350,000
Virginia	3,600,000	2,100,000	1,800,000
Maryland	1,500,000	900,000	825,000
Kentucky	5,100,000	4,500,000	3,600,000
Tennessee	3,600,000	3,900,000	3,300,000
Totals	16,500,000	13,350,000	10,875,000
U. S. crop	72,930,000	88,620,000	68,205,000

A statement of the rank of the Western states, according to their yields as reported in the census year of 1899, is presented below for comparison with their rank, based upon the combined averages for the years 1905, 1907 and 1909, as shown in parallel column. Rank of Western states in apple production in 1899, as compared with rank for 1905-7 combined:

1899	1905-7-9
5, Illinois	8, California
9, Missouri	11, Illinois
15, California	16, Missouri
16, Kansas	18, Washington
18, Iowa	19, Iowa
20, Arkansas	20, Oregon
23, Nebraska	21, Arkansas
25, Oregon	24, Colorado
26, Washington	25, Kansas
30, Texas	26, Nebraska
32, Oklahoma (and L.T.)	27, Wisconsin
33, Wisconsin	29, Idaho
34, Colorado	30, Utah
37, Idaho	
38, Utah	
39, New Mexico	
40, Minnesota	

This shows that many of these states have changed considerably since 1900 in their relative rank in apple production. Generally speaking the states of the Far West have advanced and those of the Middle West have dropped. Thus it appears that since 1899 California has advanced in rank from 15 to 8, Washington from 26 to 18, Oregon from 25 to 20, Colorado from 34 to 24, Idaho from 37 to 29, Utah from 38 to 30 and Wisconsin from 33 to 27, while Illinois drops from 5 to 11, Missouri from 9 to 16, Kansas from 16 to 25, Nebraska from 23 to 26, Iowa from 18 to 19 and Arkansas from 20 to 21.

That portion of this region which is here considered under the head of the Central West is comprised of Wisconsin, Illinois, Missouri, Arkansas, Kansas, Nebraska and Iowa. Under the heading of the Far West are grouped

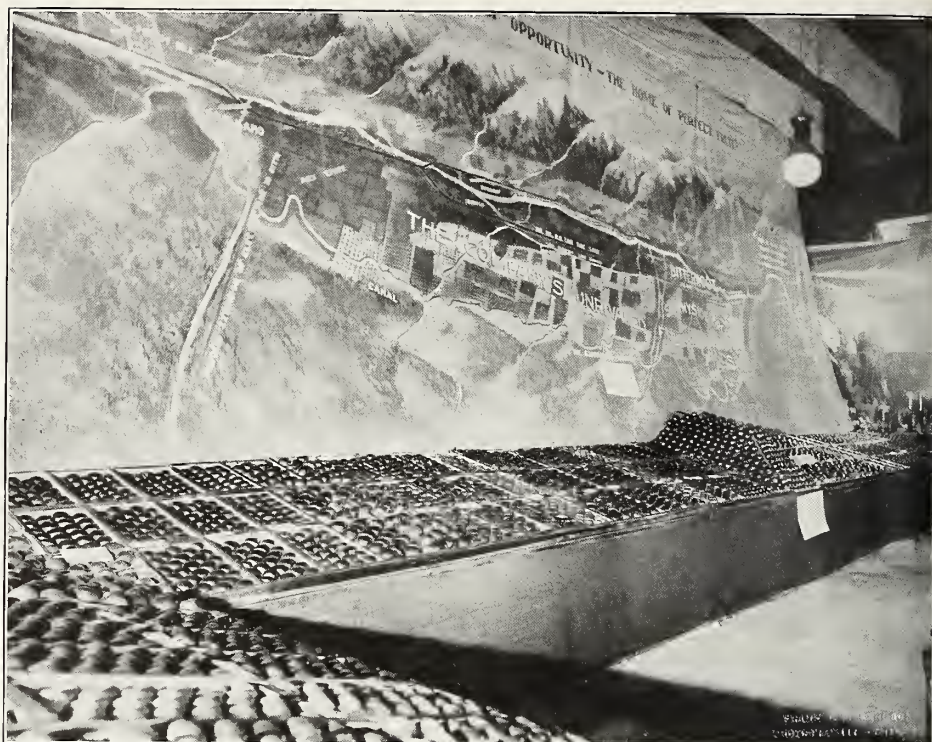


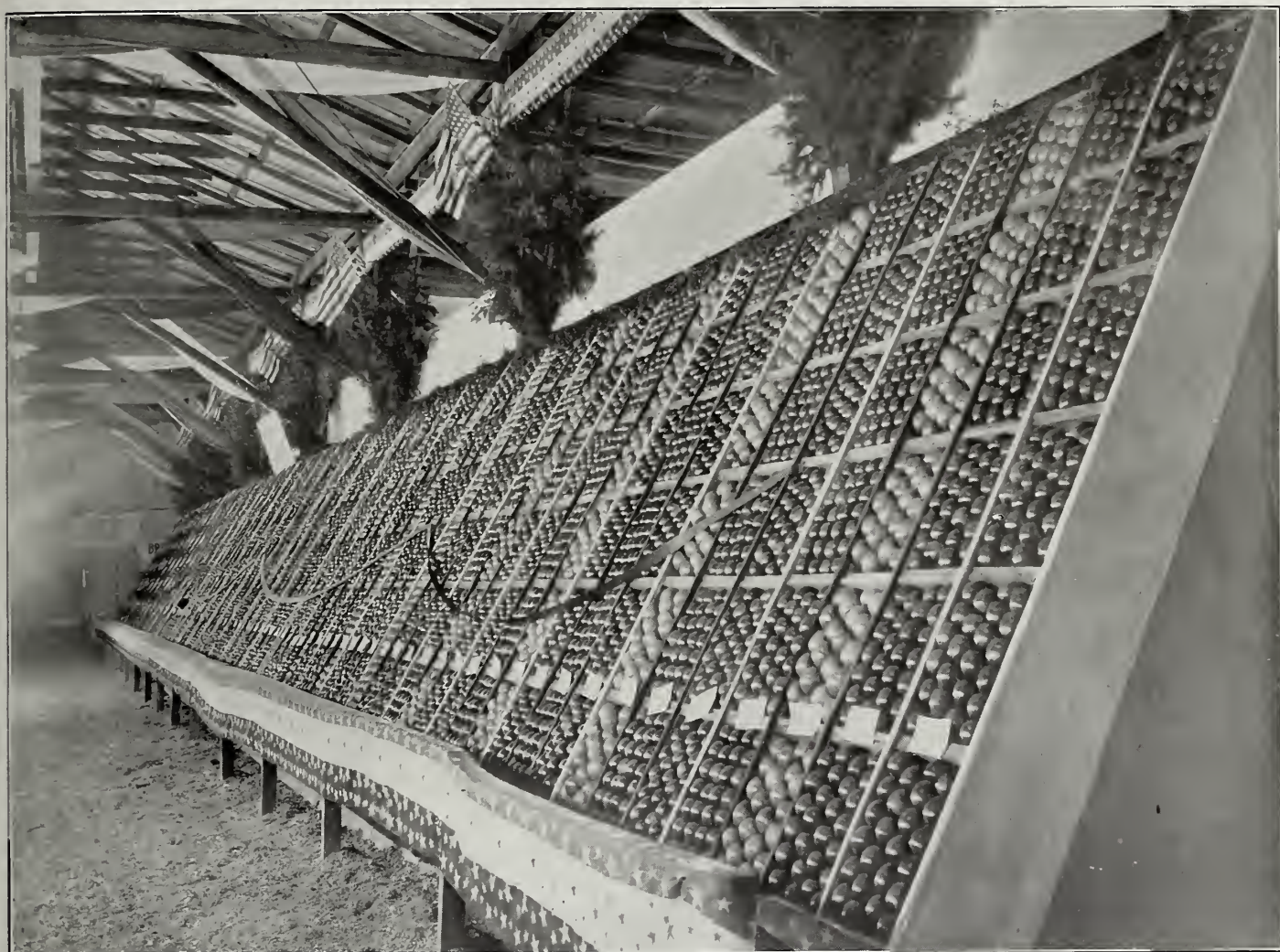
Exhibit of the Bitter Root Valley Irrigation Company at the United States Land and Irrigation Exposition in 1910 at Chicago, illustrating in a small degree what this show will be this year at the Coliseum, Chicago, Illinois, November 18 to December 9

Colorado, Idaho, Utah, Montana, California, Oregon and Washington. These are the principal apple producing states of this great region. The above mentioned reports show that of the total crop of the United States the Central West produced 20 per cent in 1899, 10.3 per cent in 1905, 8.3 per cent in 1907 and 12.5 per cent in 1909. The Far West yielded 3 1-3 per cent of the total crop in 1899, 9 per cent in 1905, 9 per cent in 1907 and 10.7 per cent in 1909. The Central West and Far West groups combined produced 23 1-3 per cent of the total crop in 1899, 19.3 per cent in 1905, 17.3 per cent in 1907 and 23.3 per cent in 1909. It is hardly necessary in this audience to call attention to the fact that neither the present status nor the prospective importance of the apple industry in this region is fully indicated by these statements concerning the aggregate amount of its crop production. In certain parts of this territory the apple industry has reached the highest stage of development yet attained both in methods of orchard management and in systems of handling, grading, packing and marketing the crop. Because they have excelled in these particulars certain districts of really small area have become world renowned as apple growing regions.

Although the Baldwin drops out of sight west of Lake Michigan till the valley of the Columbia River is reached in Central Washington, and even there does not take the lead as it does in the East, nevertheless it is convenient to speak of the region lying north of the Ben Davis region in the East as Baldwin territory. The varieties more or less associated with it in the East are Rhode Island Greening, Esopus Spitzenberg, Jonathan, Yellow and

Green Newtown Pippins, Monmouth or Red Cheek Pippin, Tompkins King, Maiden Blush and Northern Spy. These all reappear with the Baldwin in portions of Washington and Oregon, but their relative importance is changed, as we shall see later. In general it may be said that the Ben Davis and its associates show an adaptation to regions in the West corresponding to those which obtain in the East, and generally are of leading importance in the more southern districts or lower altitudes, the Baldwin and its associates becoming more prominent farther north or in higher elevations, while the Wealthy group flourishes still farther north or in still more elevated regions. Baldwin being eliminated in the Middle West, the Wealthy region there borders directly upon the Ben Davis territory.

The apple districts of Central and Southern Illinois, Southern Iowa, the Ozark region of Missouri and Arkansas, Southern Nebraska, Eastern Kansas and Oklahoma all fall within what may be designated as the Ben Davis belt, for the reason that this variety is here the dominant commercial apple. The Gano and Black Ben Davis are evidently bud sports, or possibly seedlings of the Ben Davis, because they very closely resemble that variety both in tree and in fruit. They are distinguished from it chiefly by having the fruit more highly colored. Speaking broadly, Ben Davis, Black Ben Davis and Gano probably make up about half of the entire apple crop of the West. Probably next in importance rank the Jonathan and Winesap, with Winesap perhaps in the lead. Then in smaller quantities could come Grimes, Rome Beauty, Willow Twig, Missouri Pippin, Winkler and Ralls Genet. York Imperial is gaining ground. Among the newer varieties



M. Horan's Sweepstake Car at the National Apple Show at Spokane in 1908

The Fourth Spokane National Apple Show will be held November 23-30, where twenty to twenty-five carloads will probably be exhibited. This will give you some idea of the immensity and importance of this show.

which appear worthy of mention for the Ben Davis region is the Stayman, which unfortunately is more often called Stayman Winesap, thus tending to confuse it with the old Winesap, from which it is quite distinct. Delicious, which originated in South-central Iowa, is also attracting the attention of planters. This is also making a good record in many places along the southern portion of the Wealthy territory. South of the Ben Davis district, from the Gulf States westward to California, the apple, except in high elevations, is of inferior texture and flavor, and often the trees are short lived and unproductive.

Northern Illinois, Wisconsin, the north half of Iowa, Minnesota and Southeastern Dakota fall within what may be well designated as the Wealthy territory. The leading varieties of the Ben Davis belt extend into the Southern portion of the Wealthy territory, but find their best development farther south. Among the more important varieties, in addition to the Wealthy, which are attaining commercial recognition in this region are Duchess of Oldenburg, Northwestern Greening and Salome. Colorado Orange, although as yet but little known, is proving a good storage apple and an excellent keeper

as grown in this region. The tree is making a good record for hardiness and productiveness as far north as Northern Iowa. Other varieties of more or less local importance are Malinda, Windsor, Black Annette, Patten Greening and Charlamoff. In the mountain states Mackintosh and other Canadian varieties reappear in the Wealthy territory.

The apple districts of the Central West, with their leading varieties and new plantings, may be summed up as follows: Wisconsin—In Wisconsin apples are grown mostly in small plantings about the homesteads rather than in commercial orchards. Production is gradually increasing. During the last decade the state has advanced somewhat in relative rank. It still leads Idaho and Utah, but at present its apple crop is chiefly important in supplying summer and fall apples to local markets rather than in contributing to the general market stock of winter fruit. Its varieties are those associated with Wealthy. Illinois—Among the Western states Illinois ranks in production next to California. Winter injury or injury to blossom buds by late spring freezes has for several years seriously cut down the general crop. Insects and diseases are being con-

trolled by some of the more progressive orchardists. Orchard tillage would doubtless be more generally practiced if there were greater surety of the setting of a crop without frost injury. Central and Southern Illinois grow Ben Davis and the varieties associated with it. Under present conditions planting is not being much extended. Missouri—The principal apple districts in Missouri are found in the Ozark country of Southwestern Missouri and the loose soils along the Missouri River, particularly in Northwest Missouri. In general planting is not active. The leading varieties include Ben Davis, Black Ben Davis, Gano, Winesap, Jonathan, Grimes, Missouri Pippin, Ralls Genet and Ingram. If Missouri orchards should yield to their full capacity an immense crop would be produced, but, as in the case of Illinois and other adjoining states, unfavorable climatic conditions have for several years materially shortened the crop production. Planting is not generally being extended. Arkansas—The apple districts of Arkansas are largely found in the northwest third of the state, particularly in the two northwest counties of Benton and Washington, which have from 6,000,000 to 7,000,000 trees planted. There is also an undeveloped

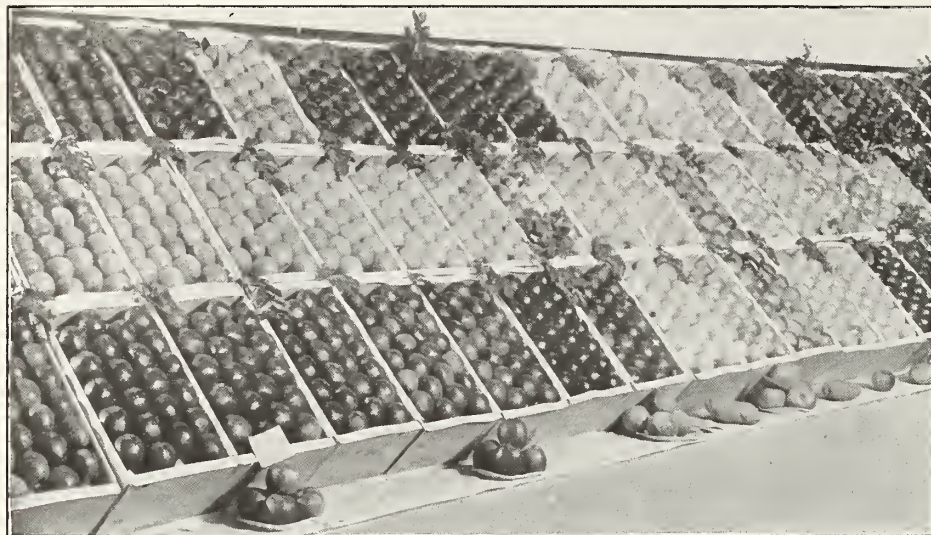


Exhibit at the Hood River Apple Show in 1910, Made from the Upper Part of Hood River Valley. This will give some conception of what the show will be this year, the dates of which are November 8, 9 and 10, at Hood River, Oregon

west-central region. The older plantings include about 90 per cent Ben Davis, Mammoth Black Twig and Winesap. Later plantings include Gano, Black Ben Davis, Jonathan, Grimes, Winesap, Stayman Winesap, Collins, King David and Delicious. Arkansas has enough apple trees of bearing age to produce a very large crop, but, as in Missouri and Illinois, the unfavorable climatic conditions in recent years have proven a rather serious handicap to the development of orchard interests, and generally speaking planting is not being extended at present. Minnesota—Apple culture in Minnesota is now mostly confined to the southeast quarter of the state, which, like Northern Iowa, Southern Wisconsin and Southeastern South Dakota, falls within the Wealthy belt. From Minneapolis southward to the Iowa line many farm orchards are found, and some commercial plantings, but they do not produce enough apples to supply the local markets. Planting increases slowly. Probably it will assume greater importance when more desirable, hardy, late-keeping varieties are developed. Iowa—In amount of crop produced Iowa now ranks next below Washington. Northern Iowa is beginning to make shipments in car lots, including such varieties as Wealthy, Duchess of Oldenburg, Patten Greening and Northwestern Greening. Commercial orchards are scattered throughout the state. Passing southward the amount of the apple crop increases and becomes most important in Southern, and particularly in Southwestern Iowa, where Grimes and Jonathan of excellent quality are grown along with Ben Davis and other Missouri varieties. It is stated that one station in Southwest Iowa shipped over six hundred carloads of apples in 1909. Planting is not active, but Iowa may be expected to gradually increase the quantity and improve the quality of its apple crop. Nebraska—Nebraska grows apples in the eastern third of the state, and with irrigation in some localities farther west. The varieties are chiefly those of the Iowa and Mis-

souri lists grown in the same latitudes. It has some important commercial orchards. Kansas—Kansas apple districts are found from Topeka northward to Nebraska and northeastward to the Missouri River, and in the valley of the Arkansas River from Hutchinson to the Oklahoma line. In recent years the most fruit has been grown in the Arkansas Valley. The varieties now chiefly planted are York, Jonathan and Grimes. Older plantings have many Ben Davis, Gano and Missouri Pippin. Oklahoma and Texas—In Oklahoma and Texas the apple is not of much commercial importance. It is attracting some attention in the Red River section and in West Texas, where the altitude reaches 2,000 feet. Here Ben Davis, Missouri Pippin and Arkansas Black are grown.

Speaking in general terms planting is far more active in the Far West than in the Central West. Also crop production is there increasing much more rapidly, and methods of orchard management and of handling and marketing the crop have been brought to a higher degree of perfection. The general drawbacks in the Central West are, first, the liability of loss from unfavorable climatic conditions, and, second, the conservative attitude of the average grower resulting from lack of confidence in the reliability of the apple crop. Winter injury to trees and buds, the occasional freezing of the crop on the trees in autumn and the more frequent destruction of buds and blossoms by late spring frosts all combine to produce this lack of confidence. Drought, too, is a more important climatic factor in this region than it is in either the Far West or the East. Despite these really formidable drawbacks, commercial apple growing surely will increase in the Central West. The immediate increase will be gradual, but later on it will be more rapid. Freezes are being fought successfully by orchard heating. Insects and diseases can be controlled. Good soil, plenty of sunshine, dry air, generally favorable weather for apple pick-

ing and proximity to good markets are all advantages which help to offset the drawbacks. Drought can be met by better systems of orchard soil management. Varieties better adapted to this region than some of the old standard sorts are being introduced and considerable interest is developing in the matter of originating improved new varieties through the plant breeding work of experiment stations and horticultural societies. Minnesota has a farm of eighty acres devoted to this particular purpose and other states are doing considerable work of this kind. On the whole the apple outlook for the Central West is encouraging.

Apple districts of the Far West, with their leading varieties and new plantings, are as follows: Wyoming—Some orchards in Wyoming are already in bearing and a considerable number of others are being planted, but apple growing here is in its infancy. No shipments are made, for local markets take all the crop. Colorado—In apple production Colorado ranks as the most important of the inter-mountain states. The leading sections are Grand Valley, North Fork, Uncompagne Valley, Montezuma County and Canyon City. In the older orchards Ben Davis is the chief variety, but the newer plantings are largely of Jonathan, Rome, Winesap and Gano, with lesser amounts of Grimes, Winter Banana, Delicious, King David and others. The drawbacks include winter killing and dying of trees, late spring freezes and the common insect and fungous diseases. Orchard heating receives much attention. Spraying is very thorough. The former method of continuous clean culture is being modified by the use of some such shade crop as red clover. Utah—Utah grows apples commercially in the Cache Valley, on the west side of Bear Valley, in the Utah Valley, in the Sand Ridge region south of Ogden, and to a lesser extent in other parts of the state. Less than 20 per cent of its trees have come into bearing. The new plantings include more Jonathan and Gano than all other kinds combined. They also have Ben Davis, Winesap, Rome, York, Missouri Pippin and Winter Banana. New Mexico—New Mexico apple districts include the Rio Grande Valley from north of Albuquerque to the Texas line, the Roswell district in the Pecos Valley and the Farmington district in San Juan County. The leading older varieties are Ben Davis, Arkansas Black, Mammoth Black Twig, Gano, Winesap, Jonathan, White Pearmain, Rome, Missouri Pippin and Akin. More recent plantings include Black Ben Davis, Delicious, Oliver, Stayman Winesap and Ingram. Interest in apple planting increases. The Roswell district leads with about 1,500 acres in bearing, and in addition is planting about 1,000 acres annually. Arizona—The drawbacks in this state aside from distance from markets are root rot, codling moth and excessive heat. There are only about 1,000 acres of apple orchards in the state. California leads the West in apple production. The area now

approximates 40,000 acres, about two-thirds of which has reached bearing age. In 1909 the output was about 5,000 cars. The leading sections are the southern part of Santa Cruz County, the northern part of Monterey County, Sonoma County, Mendocino County, along the coast, and the foothills of the Sierras. The varieties vary in different regions. They include Newtown, Bellflower, White Pearmain, Gravenstein, Red Astrachan, Rhode Island Greening, Esopus Spitzenberg, Missouri Pippin, Red June, White Astrachan, Jonathan and Ben Davis. Oregon—Oregon's apple districts include Rogue River Valley, in Jackson County; Hood River and Mosier, Grand Ronde Valley, Willamette Valley, Umpqua Valley, in Douglas County; the Milton-Freewater district, in Umatilla County, and certain coast regions, as in Coos County. The most extensive new plantings are in Willamette Valley. The dry air and abundant sunshine favor a good set of fruit, the development of high color and good results from spraying. There is comparative freedom from frost injury. Varieties in the older orchards include Ben Davis, Gano, Rome Beauty, Esopus Spitzenberg, Newtown Pippin, Jonathan, Baldwin, Northern Spy, Gravenstein, York and Tompkins King. The newer plantings are chiefly of Esopus Spitzenberg, Newtown, Rome and Gano, and also include Ortley, Grimes, Arkansas Black and some others. Washington—In Washington apples are largely grown in the Spokane, Walla Walla, Wenatchee and Yakima districts, but other regions are developing. The varieties include those mentioned for Oregon, but with various changes in relative importance in the different districts. Oldenburg, Wealthy and Yellow Transparent also receive recognition from Washington planters. Idaho—Idaho apples are chiefly grown along the Snake Valley, in the southwest and western parts of the state; also in Northern Idaho. The varieties include Jonathan, Rome, Winesap, Ben Davis and others of the Washington list. Planting is active, particularly under irrigation. It is not uncommon to find new orchard projects of several hundred acres each.

There is reason to expect a satisfactory increase in apple production and improvement in quality of the stock put upon the market in the Far West. The latter will result from better methods of orchard management and of grading and packing. For the next few years Oregon promises an increase in production of from 10 per cent to 25 per cent annually, with the standard of quality well maintained. In some Oregon districts the acreage is now three times as great as it was three years ago, and in other places it has doubled during the past year. It is reported that in Washington the plantings are increasing at the rate of about 1,000 acres a year. Colorado reports that between 5,000 and 10,000 acres were added to her apple orchards in 1910. About 7,000 cars of apples were shipped in 1909. The outlook promises a good advance in the quality and

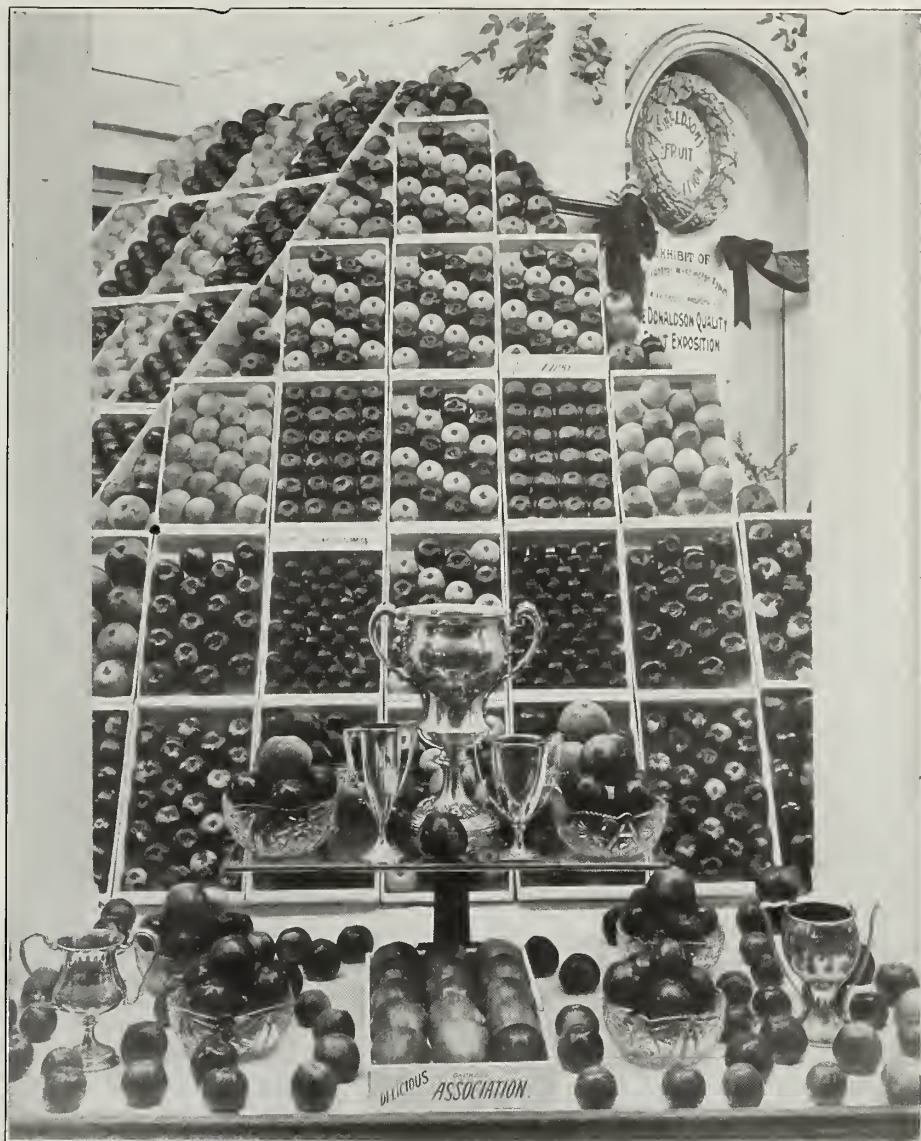


Exhibit of Central Washington and Wenatchee at the Donaldson Fruit Show in 1910. This will give an idea of what the Northwest Land Products Show will be this year at St. Paul, Minnesota, at the Auditorium, December 12-23. This show will be a general land products show of the Northwest.

quantity of the crop. It has been estimated that this state alone has 1,000,000 acres suitable for apple culture. In Utah the production will probably double within the next three or four years, with the quality constantly improving. In New Mexico and Arizona the orchard area is being extended in some of the elevated districts, although the total acreage is not large. In Idaho and Montana planting in certain districts is active and the outlook is encouraging.

We have seen that for the immediate future doubtless there is to be a gradual increase in apple production throughout the Central West, and a rapid increase in the Inter-Mountain and Pacific Coast states. The question immediately arises, is there danger of over-production? In considering this question we should not lose sight of the inevitably rapid increase in demand. Apple buyers already come every year from Vladivostok, Siberia, to our Pacific Coast states. Some little trade in apples also exists with other parts of the Orient. What this may develop into within the next decade or two it

is hard to predict, but with better facilities for reaching the Asiatic millions the consumption of American apples in that quarter of the globe will naturally tend to increase, and there is a possibility that it may assume large proportions. Alaska grows no apples, but will increase in population with the further development of its resources, and surely will become an important apple market. The opening of the Panama canal will set in motion new currents of trade and stimulate others in a way that may well be expected to increase the demand for the products of all our orchards, including apples. With better facilities for refrigeration and transportation, both continental and oceanic, the outlet for apples in European and other foreign markets will be sufficient to act more and more as a very important factor in giving a steady tone to domestic prices.

One other factor, and possibly the most important, is the home demand. We have today in this country perhaps 90,000,000 of people. It is estimated that our population will reach 117,000,000 by 1920, 142,000,000 by 1930, 170,-

000,000 by 1940 and 200,000,000 or more by 1950. In other words, the next forty years is to see the population of the United States more than double. The outlook for a constant increase in the domestic trade is certainly good. The apple orchards of the continent seldom, or never, all yield to their full capacity in any one season. Consequently the actual crop produced is each year considerably less than the orchard capacity might lead one to expect. Tens of millions of trees of bearing age throughout the country are barren this year, and have been in other years, though, of course, it is not always the same trees that are without fruit. Seldom, indeed, is there a year like 1896, when every apple tree in the

United States seemed to be loaded with perfect fruit. Besides this, it is hardly reasonable to expect that the increase in acreage planted will result in a corresponding increase in crop production. Not all the apple trees which are being planted East and West will reach bearing age, and of those that do grow to maturity many will never come into profitable bearing. In the West particularly the growth in orchard area may be expected for some years to come to be relatively greater than the increase in apple production, because absentee ownership, inexperience in orchard management on the part of the newcomers, planting on unsuitable soils or in undesirable locations and other drawbacks will all combine to

prevent a very considerable percentage of the newly planted trees in that part of the country from becoming an important factor in crop production.

In view of all these considerations it appears that there is a good basis for the unmistakably optimistic feeling among intelligent growers and dealers as to the future of the apple industry in the United States. It is reasonable to expect that in spite of the active increase in planting in many parts of the West the supply of good fruit will not for any considerable period exceed the demand at prices remunerative to both grower and dealer, while the consumer may expect, and doubtless will, more and more demand better grading and better quality of fruit.

Production of Apples East of the Great Lakes

Professor U. P. Hedrick, Horticulturist Experiment Station, Geneva, New York, at Apple Shippers' meeting

THE subject your program committee has given me to discuss, "The Production of Apples East of the Great Lakes," is one peculiarly difficult to consider, as compared with a discussion of the Western apple area. Apples in the East are largely grown to supply local markets, whereas in the apple regions of the West most of the crop is sent to distant markets. Because of this, as a chief factor, the apple sections in the East are far less centralized than in the West, the individual orchards are much smaller, the number of varieties is much greater and the methods of packing and selling are far more diverse. Add to these conditions another, namely, that the orchards in the West are comparatively young—few being past their prime—whereas in the East they range from newly set stock to hoary-headed patriarchs, and it is plain that data is easier to obtain from the West, and is possibly more reliable. I say "possibly more reliable," for I sometimes think that the rosy apples of the West make everything look rosy to our Western brethren, and that it may be that the monstrous figures of acres and trees, carloads and boxes, big apples and dollars reflect the rosiness of the apples, and that Western figures are sometimes just a little colored. In presenting the data that follows I have done my best to overcome the difficulties named, and, with the co-operation of the station horticulturists and the leading fruit growers in the states to be considered, I hope to give you reliable data. In times past I have discovered that there are often great discrepancies between information given by fruit growers and that given by fruit shippers. Now, mine are all fruit growers' data, and you who are mostly fruit shippers have my permission to translate them into fruit shippers' data, up or down, as the conditions of the season's markets may seem, in your judgment, to require.

Coming to my subject, we may as well begin with the New England states and with Maine. Apples are grown to some extent in every part of Maine. They are grown commercially,

however, mainly in the interior river valleys, especially those of the Androscoggin, Kennebec and Penobscot. The Baldwin easily heads the list as a commercial variety in this state, followed in order by Ben Davis, Northern Spy, Gravenstein, King, Stark, McIntosh, Hubbardston, Wealthy and Yellow Bellflower. Pests are numerous and very troublesome. The codling moth, brown tail moth, gypsy moth, railroad worm, curculio and apple scab are the worst of these. Spraying has not been a general practice in the state, but the gypsy and brown tail moths are slowly driving the fruit growers to spray. At present not more than 5 per cent of the commercial orchards are sprayed. Maine apple growers have not awakened to the necessity of tillage. Probably 95 per cent of the orchards are in sod; the cultivated 5 per cent acreage, however, show the value and the necessity of tillage if profitable quantities of apples are to be grown. The number of apple trees in Maine in 1900 was 4,187,781, producing 1,421,773 bushels of fruit. The number now is very considerably greater, the increase having taken place very largely within the past two years. The bearing acreage, however, at the present time is not much larger than 1900, the cold winters during the past decade having destroyed many trees. The outlook for apple growing in this state is promising. There is an awakened interest in the industry, and it should not be very long before Maine will be putting a considerable quantity of handsome, well flavored, long keeping apples on the market.

Apple growing in New Hampshire is very similar to the same industry in Maine. In New Hampshire in 1900 there were 2,034,400 trees, producing 1,978,797 bushels of fruit, the leading sorts being Baldwin, Rhode Island Greening, Roxbury Russet, Northern Spy, McIntosh, Yellow Bellflower and King. The Gravenstein can be well grown in this state, as in all parts of New England, and should be grown much more largely than at present.

Apples may be grown everywhere in this state, except in highest altitudes.

The number of trees in Vermont at the last census was 1,675,100, which gave the preceding seasons 1,176,800 bushels of apples. There are three distinct apple regions in Vermont, the most important of which is the Champlain region, stretching up to the St. Lawrence and Canada on the north. The speaker has never seen handsomer McIntosh and Northern Spy apples than come from this region. The second in importance is the upper Hudson River Valley region and the third the Connecticut River Valley. The best orchards and the best orchardists are found in the first region, where, however, there is a great chance for the improvement of both. The land about Lake Champlain, in Vermont, and the adjacent territory in New York ought to be planted wholly to apples, for nowhere can finer apples be grown. The chief hindrance to apple growing in the last two states is the apathy of the people. The farmers are, and have been for generations, general purpose farmers, and few of them are willing to specialize to the extent that is necessary to grow apples profitably.

Apples grow abundantly everywhere in Connecticut, but the fruit of highest color, finest texture and best quality comes from the rocky hills having an elevation of 1,500 feet. The number of trees in 1900 was 1,167,300, having produced 3,708,931 bushels of apples in 1899; large plantings have been made since the date given. The leading varieties are Baldwin, Rhode Island Greening, Roxbury Russet and Northern Spy. Most of the common apple pests are present, to which must be added the brown tail and gypsy moth, but very few spray and few cultivate. There is nothing wrong with the quantity and the quality of the apples grown in Connecticut when properly grown, but until the past two years there seems to have been little interest in the industry.

Apple growing in Rhode Island is but poorly developed, nor does the state offer much for the future, the climate and soil being illy adapted to the cul-



Views of the National Apple Show, Spokane, 1910
Showing a car of Spitzenbergs exhibited by C. H. Sproat, Hood River, Oregon, winning the sweepstakes and first prize for Spitzenbergs, and a car of Newtowns exhibited by Avery Brothers, Hood River, winning the first prize for Newtowns. This was one of many similar exhibits last year, there being about twenty-five cars on exhibition. The Fourth National Apple Show will be held this year at Spokane, November 23-30, and it promises to be a better show than ever before, and we might add that the National Apple Show of Spokane has never been equaled by any other apple show

ture of this fruit. It is not likely the acreage will soon vary much from that at present planted, which is 213,598 trees, producing 329,445 bushels of apples, chiefly Baldwins, Greenings, Russets and Spies.

In spite of the fact that the people of Massachusetts probably consume more apples than other people on the same area, the state can now hardly be said to grow apples commercially, the number of trees in 1900 being but 1,852,000, with the yield of 3,023,400 bushels of fruit. The amateur fruit grower is probably better developed in Massachusetts than in any other part of the Union, and the people are a home-loving people, so that the great majority of the trees given in the figures above are in home orchards. Apples can, however, be grown very well in almost any part of the state, and particularly so in Worcester County, about Grafton, Salem, Newburyport and Haverhill. The Baldwin is, by all odds, the leading variety, with Greening, McIntosh and the Spy next in importance, though close to Boston Williams' Early, Gravenstein, Wealthy and early sorts are grown considerably. The brown tail, gypsy and codling moths and San Jose scale are the chief orchard pests and do untold damage, still not more than 10 per cent of the orchardists spray; about the same number cultivate. There is a great revival of interest in Massachusetts, and during the past two years many trees have been set.

New York contains more than twice the number of trees, more than twice the acreage and more than double the yielding capacity in apples of the six New England states, and leads all the states of the Union in commercial apple growing. The number of trees in New York in 1900 was 15,054,832, yielding the year previous 24,111,300 bushels. The above figures will be increased in the census just being taken by at least

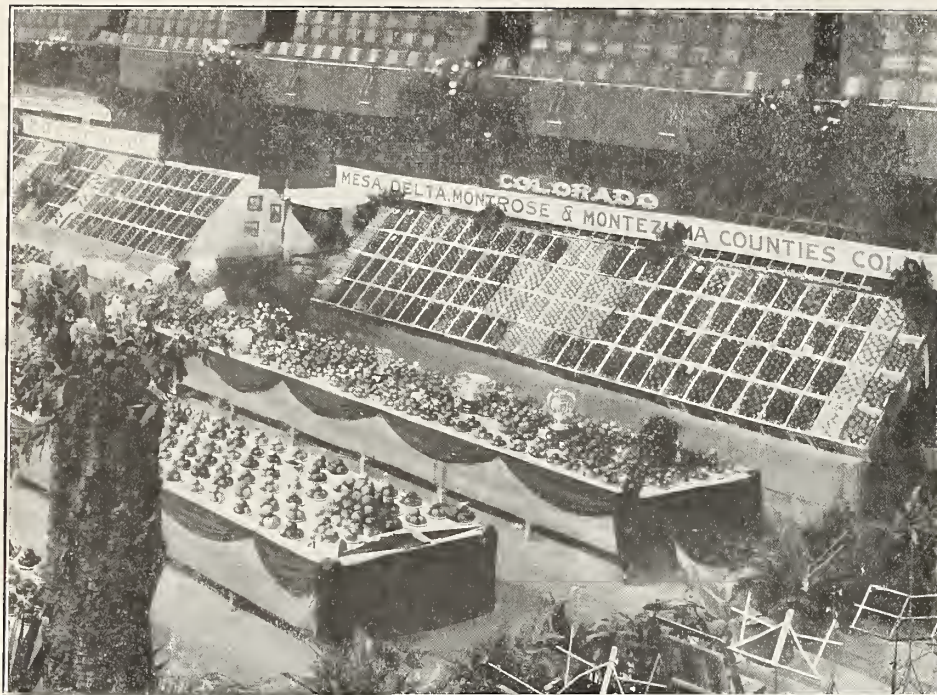
one-sixth. Apples may be grown profitably in any part of New York, where agriculture is practiced, and commercial orchards are found in practically all parts of the state. There are, however, three chief apple districts, the most important of which is the region about the central lakes and northward to Lake Ontario. The several counties in this great area probably produce more apples than are grown in any region of equal size in the world. The chief asset of this apple belt is the climate, which is comparatively uniform in both temperature and humidity, brought about by the large, deep bodies of water surrounding the region. Here is the home of the Baldwin, the Greening and the Roxbury Russet—all far famed for quality and quantity. The region on both sides of the Hudson, from Long Valley to Lake George, comprises the second most important apple region; added to the three sorts named above, Jonathan, Spitzenberg and Newtown Pippin are grown. The high and

rolling land tributary to Lake Champlain and the St. Lawrence River is splendidly adapted to apple growing. Northern Spy, McIntosh and Fameuse grow as well here as these varieties can possibly be grown. As yet this region is little developed, and anyone who has seen the fruit grown here knows that it promises well for the future. Besides the varieties named, Hubbardston, Baldwin, Wealthy, Bellflower, Tolman Sweet, Oldenburg, Gilliflower and other less known sorts are generally grown in all parts of the state. The apple tree in all parts of New York is large, productive and long lived, and the fruit is most excellent in quality, lacking, however, the size and, more important, the handsome color of the apples grown in Western regions. The insect and fungous diseases found in the state are kept fairly well under control in commercial orchards by spraying, and there is a growing tendency to till, prune and otherwise care for the trees. Still the apple in this state, as in all Eastern states, has been grown for over two centuries as an adjunct to the farm, and to neglect the trees is "bred in the bone." Lack of care is the curse of fruit growing in New York, not one-quarter of the orchards receiving anywhere near the attention necessary to grow the best fruit. The outlook, however, is brightening. Apple culture is proving one of the most remunerative crops grown in the state, and with the advent of many growers from the cities and a new generation of growers on the farms, and with the educational work of Cornell University, the three secondary schools of agriculture, the Department of Agriculture and the experiment station, better conditions are everywhere apparent in apple growing in New York. With proper care of the trees now in existence the product of first class fruit might easily be doubled in quantity. The acreage can be multiplied many times in the state, as scarcely a tithe of the apple lands in New York are now planted.

The number of apple trees and productiveness of the trees in Pennsylvania are surprising to those who have



Exhibit at Oregon Apple Show and State Horticultural Meeting in 1910, which will give some idea of what the show will be this year in Portland, Oregon, November 15-17



Prize Winning Colorado and Idaho Apples Exhibited at the National Horticultural Congress at Council Bluffs in 1910. This show will be held this year at St. Joseph, Missouri November 23-December 2, and promises to be conducted on a much larger scale than ever before

not looked at the figures. In 1900 there were 11,774,200 trees, producing 24,060,600 bushels of fruit. We do not usually count Pennsylvania as one of the great apple states, but these figures place it among the leading half dozen. A study of the census report, however, shows that the industry is not specialized and the product is not largely commercialized, the trees being very evenly distributed about the farming communities of the state, and the apples being largely used by the growers and the local markets; still there are several regions in Pennsylvania in which fruit is grown commercially as the Cumberland Valley, especially in Adams and Franklin County, in the territory south of Pittsburg; also that north of Wilkes-barre, particularly Wyoming County. Somerset County, in the southwest, is also a producing region of growing importance. In the southern districts York Imperial, Ben Davis, Grimes Golden, Winesap and Rome Beauty are particularly well adapted to climate and soil; in the northern parts of the state Spy, Baldwin and King are largely grown, with liberal sprinklings of Greenings, Winesaps and a few Bell-flowers. The diseases are not well under control owing to the fact that few of the orchards are commercial plantations. The trees are not well cared for in other respects as in tillage and pruning. In some parts of Pennsylvania there is a veritable boom in apple growing, and the number of trees has greatly increased since the 1900 census. There is an abundance of cheap lands admirably adapted to the growing of apples, and near local markets which want apples and can pay for them. Pennsylvania is destined to be one of the great apple states of the Union, but the mining and manufacturing towns of the state will probably consume all the fruit produced,

and more for years to come, if the product is properly marketed.

New Jersey is famous for its early apples, and most of the commercial orchards of the state are planted with early varieties, as Yellow Transparent, Early Williams and Starr, followed by Maiden Blush and Wealthy; for late sorts Winesap, Rome Beauty, Ben Davis and York Imperials are largely grown. The total number of trees for the state is 1,810,800, producing 4,640,900 bushels of fruit. The orchards are chiefly located in Gloucester, Camden and Burlington Counties, in the southern part of the state, though there are good orchard locations in the northern counties, especially Hunterdon. Fruit trees in New Jersey have suffered terribly with the scale, and apple growers have very generally been forced to spray. The land is for most part light, so that all fruits must be cultivated if large yields are secured. Fruit growing is just beginning to recover from the terrible onslaughts of San Jose scale, and tree planting is more and more common.

The conditions of apple growing in Delaware do not differ materially from those prevailing in New Jersey. The last census gives the number of trees as 567,618, producing 702,900 bushels of apples. Practically all of the commercial orchards in this state are in what is known as the Camden and Wyoming districts in northern Kent County and in northern Sussex County. Such apples as are grown in other parts of the state are used by the growers; the soil is light and the climate mild in Delaware, giving particularly advantageous conditions for the growing of early apples, of which Yellow Transparent, Early Ripe, Fourth of July, Williams and Red Astrachan are the leading varieties; the late sorts are the same as those named for New Jersey.

The pests are the same as in the Northern states, with one exception, namely, the bitter rot, which begins to creep in from the South, and is possibly the worst foe the apple grower in Delaware has to contend with. The hight, too, does rather more damage than farther north. Apple growers must spray, as San Jose scale is everywhere and the sandy soils compel rather careful cultivation. One of my correspondents in this state reports that the increase in bearing trees since 1900 is probably about 5 per cent, but he estimates that in non-bearing trees it is possibly 1,000 per cent, since thousands of acres have been set out every year during the past few years. He further states that Delaware is to be known as an apple state instead of a peach state in the years to come, and that the apple outlook is brighter than for any other crop in the state.

The apple regions of Maryland are found in the northern two-thirds of the eastern shore, the northern portion of the state and in the highlands of Western Maryland. In the first regions the soil and conditions are practically those given for Delaware; in the north and west the soils are heavier, with clay and gravel loams predominating; on the eastern shore the varieties grown are those named for Delaware, but in the other portions of the state the York Imperial and Ben Davis are more largely grown than any other varieties, followed by Stayman Winesap, Grimes Golden and Rome Beauty. The usual pests are to be found, to which must be added the "bitter rot." Commercial orchardists very generally spray and cultivate their orchards; home growers seldom do so. Apples are being largely planted in Maryland, and the 1,824,200 trees given in the 1900 census can now probably be increased by 25 per cent, while the productive capacity given in the same census of 3,150,700 bushels might possibly be increased by 5 per cent.

Apple culture in America began in Virginia. Plantings of apples were made on the Jamestown Island in 1607. The London Company imported many scions in 1672, and before 1700 orchards of considerable size had been planted. Among the famous orchards of Virginia is the one at Monticello, planted by Thomas Jefferson, fruit from which won supremacy in the New World. Virginia is separated into six physical divisions, known as Tidewater, Middle Virginia, Piedmont, The Valley, Blue Ridge and the Appalachian Region. The apples which have won renown for this state are for most parts grown in The Valley and the Piedmont divisions. Piedmont, with an altitude of about 1,000 feet, with a dark red clay soil, is famous the world over for its almost perfect Albemarle and Winesap apples. Orchards in coves, on hillsides barely tillable, yield fabulous returns, individual trees having often produced in one season \$100 worth of Albemarle Pippins. The Valley, however, leads in apple production so far as quantity is concerned. The soil is limestone, espe-

cially adapted to the growing of York Imperials and Ben Davis, though such sorts as Early May, Red June, Early Harvest for the earlies, and Sweet Bough, Maidens Blush, Pennock, Fallawater, Smokehouse and Winesap are also largely grown here. The total number of trees for the state is 8,190,000, which produced in 1899 9,836,000 bushels of fruit. Orchard pests are numerous and are not under control; cultivation, except in the best kept commercial orchards, is as yet scarcely known; even in the famous Piedmont orchards, which produce the wonderful Albemarle Pippins, the trees are poorly cared for. As in the states to the north, there is at present a revival in apple planting and thousands of young trees are being put out.

West Virginia is forging to the front in the production of apples, the chief regions being known as the Northern Panhandle and the Eastern Panhandle. The great apple of the Northern Panhandle is the Willow Twig, followed by the Ben Davis and Rome Beauty; in the Eastern Panhandle the York Imperial, Ben Davis, Grimes Golden, Winesap and Mammoth Black Twig are planted in about the order given. Spraying has become quite general in the Eastern Panhandle, but is not practiced much in the northern. Orchardists, however, have made very great advances in spraying in this state in the last few years. As in Virginia, cultivation is not making headway. The fact that the orchards are mostly on hilly ground makes it impossible to cultivate many of the orchards in this state. The only figures available for apple growing in West Virginia are those of the 1900 census, which give 5,441,100 trees, producing 7,495,700 bushels of fruit in 1899.

We do not usually think of North Carolina as an apple state, and yet the census figures place it away above the average among the states of the Union in apple production. These figures are for 1900: 6,438,900 trees, producing 4,662,700 bushels of fruit. The apple orchards of the state are for most part



Southern Idaho Apples on Exhibition at the National Horticultural Congress at Council Bluffs in 1910, which will give some idea of what the show will be this year at St. Joseph, Missouri, November 23 to December 2

in the western mountains of North Carolina, where the soil and climate is much the same as in West Virginia; the leading varieties are Winesap, York Imperial, Rome Beauty and Ben Davis. Spraying and cultivation are practiced, but to a limited extent. Many orchards are being set and apple growing is becoming popular in the regions adapted to it.

Apples are not largely grown commercially in South Carolina, although in the Piedmont and Alpine regions, ranging in elevation from 400 to 3,000 feet, apples can be grown in tempting variety. The fertile valleys and mountain coves in these regions, under the manipulation of skillful hands and a competent head, would make apple growing profitable, even this far south. The latest figures give the number of trees as 694,700, producing but 251,700 bushels of fruit, most of which is, of course, consumed by the growers.

It is scarcely to be believed that Georgia contains more apple trees than

the average New England state, yet such is the case, the number being 2,036,000 trees, a larger number than in any New England state, excepting Maine. The production, however, for the year in which the census was taken was low, being but 670,900 bushels. All the commercial orchards of apples are in what is known as the Tennessee dip, where in the mountain coves apples thrive as well as in any of the states in the North, Pickens, Gilmer, Murray and Fannin Counties being famous for their apples. In some of the mountain coves of this state neither insects nor fungous pests named for the Northern states, are to be found. For most part the apple orcharding in this state is crude and primitive so far as care of the trees is concerned. For summer apples Red Astrachan, Yellow Transparent, Early Harvest and Red June are grown; the leading winter apples are Ben Davis, Winesap, Rome Beauty, Terry, Yates and Arkansas Black. In the counties named apple growing ought to succeed, as the local markets are excellent, with Cuba, Mexico and South America promising well for outside markets. Labor here, as in all of the Southern states, is comparatively cheap. Some of the men who have been growing peaches in Georgia are now turning their attention to apples, expecting greater certainty in the growing of this fruit than with the peach.

Alabama is not often counted among the states producing apples, nevertheless it has 2,015,700 trees, producing 719,200 bushels of fruit. The number of trees is about the same as in New Hampshire, but the yield is less. The apple region of Alabama is a continuation of that of Georgia, and the conditions noted for the latter state hold in Alabama.

Quite surprising are the apple figures of Tennessee, this state having 7,714,000 trees, producing 5,387,800 bushels of fruit. Apples are grown in all parts of the state, except in low river bottoms.



Commercial Exhibit of Apples and Canned Goods from Utah, at National Land and Irrigation Exposition, Chicago, in 1910, showing one of a thousand or more features that will be on exhibition at this show this year at the Coliseum Chicago, Illinois, November 18 to December 9

great drawback to apple growing is the lack of care. With the tremendous handicap of apathy and shiftless orcharding the apple industry of the East is insignificant in quality and quantity of fruit to what it might be.

One last look at apple figures and I am done. The total number of trees in the United States in 1900 was 201,794,642, and these produced in 1899 175,417,700 bushels of apples. About two-thirds of the trees in the country

are east of the Mississippi, and these ten years ago produced over six-sevenths of the apples consumed by the American people. We shall all look forward to the figures of the census now being taken.

An Analysis of Western Spraying Methods

By A. L. Melander, Entomologist State Agricultural College, Pullman, Washington

DURING a study of the methods of spraying for codling moth I had occasion to correspond with a number of fruit growers at the close of the 1909 season. The list of correspondents was made up of the prize winners of the Apple Show at Spokane that year, with a few others added, to whom I had previously been writing about codling moth spraying. Inasmuch as these letters, when collected, brought out much interesting information as to present-day methods of spraying in the Northwest, I sent out an additional set of inquiries at the close of last season. Some of the letters went to districts where there is no codling moth; some brought back answers which were too indefinite to use; but, nevertheless, a goodly number of reports were secured worth recording. The replies, representing some fifteen hundred acres, may be considered as an elaborate practical experiment. They show how well or how poorly the fruit growers have succeeded in the fight against the moth. In a limited way they show the practices of spraying followed in the various districts. The fruit grower of tomorrow can well profit by the examples of the more successful, if not of the majority. Obviously, there is error in the final results. A hundred observers will give a hundred interpretations of the condition of the orchards, but as the errors are as apt to be on one side as the other the total should average somewhere near the truth.

In the table herewith I group the figures by districts, showing which sprayings were given, the number of gallons of spray made with each pound of arsenate of lead, the method of spraying, the total crop in boxes and the amount of loss. In indicating the date of the sprayings this system of abbreviations is used: First spraying: a, at end of blossoming; b, immediately repeated. Second spraying, for first brood: c, one to two weeks after blossoming; d, two to four weeks after blossoming; e, four to eight weeks after blossoming. Third spraying, for second brood: f, July. Fourth spraying, for second brood: g, August. Fifth spraying, for third brood: h, September.

An analysis of these records will be worth while. In the first place it will be remembered that the year 1909 was generally considered as a "worm year," while the year 1910 showed much less worminess. Reduced to figures this idea is sustained, for 6.5 per cent of the 100,000 boxes reported in 1909 became wormy, while but 3 per cent of the

300,000 boxes were infested the next year. The explanation is not so much that the season was hot and dry, or that there was a dearth of parasites, or that the brands of lead were below grade, or that fewer sprayings were given, but is mainly that the 1909 crop was generally short, in some districts markedly so, and a small crop means a higher percentage of worms. The total number of codling moths the country over remains nearly constant year after year, so when there is but little fruit

the moths must concentrate their attacks on the few apples, and then there is a greater chance that the apple will become wormy. But, compared acre by acre for the two years, there were almost exactly eleven boxes wormy to the acre each year. The excessive worminess of 1909 was due to the lighter crop and not to an actual greater abundance of worms.

To show the value of spraying once, twice or more times the foregoing tables are summarized: In 1909, nine-

1909

WENATCHEE VALLEY

Town	Spraying	Formula	Power or Acre- age	hand pump	Crook used	Tower used	Total crop, boxes	Boxes wormy	Pct. w'my
1, Cashmere	a	1:50	40	P	Yes	No	6,023	2	..
2, Cashmere	a	1:50	6	P	Yes	No	4,000	1	..
3, Cashmere	a	1:50	..	..	..	..	1,500	20	..
4, Wenatchee	a	1:50	15	P	Yes	Yes	2,680	5	..
5, Wenatchee	a	1:40	3	P	Yes	No	1,250	275	(1)
6, Wenatchee	a, c	1:33	5	2H	Yes	Yes	2,400	150	..
7, Wenatchee	a, d	1:20	5	H	No	No	3,200	80	..
8, Wenatchee	a, f	1:25	5	P	Yes	Yes	1,500	1/2	..
9, Wenatchee	a, f	1:33	30	P	Yes	Yes	18,000	180	..
10, Wenatchee	a, f	1:25	4	P	Yes	No	2,800	140	..
11, Wenatchee	a, f	1:33	8	P	Yes	Yes	2,500	175	..
12, Wenatchee	a, f	1:17	6	H	Yes	No	2,500	150	..
13, Cashmere	a, f	1:17	7	P	Yes	No	1,000	50	..
14, Cashmere	a, f	1:33	7	H	Yes	No	900	18	..
15, Wenatchee	a, d, f, g	1:30	10	P	Yes	Yes	9,000	900	..
16, Cashmere	a, c, f, g	(3)	..	..	..	..	..	..	1/2

YAKIMA VALLEY

17, Kiona	None	..	4	..	..	..	..	..	95
18, Sunnyside	a	1:50	2	P	Yes	Yes	1,400	14	..
19, Naehes	a, b	1:50	6	P	Yes	Yes	900	18	..
20, Granger	a, c	1:33	20	P	Yes	No	3,000	300	..
21, North Yakima	a, e	..	16	P	Yes	Yes	4,800	480	..
22, Prosser	a, g	1:40	2	H	Yes	Yes	..	..	65
23, North Yakima	a, g, h	1:33	1	H	Yes	No	750	115	..
24, North Yakima	a, d, f, h	(4)	..	..	..	..	..	..	25
25, North Yakima	a, f, h	1:25	80	P	Yes	No	..	..	10-30
26, Toppenish	a, f, g, h	1:25	3	P	Yes	No	1,050	10	..
27, Selah	a, c, d, e, g	1:33	11	H	Yes	No	6,160	185	..
28, Alfalfa	a, c, f, g, h	..	..	..	..	..	..	..	66
29, Mabton	a, d, e, f, g	1:33	3	..	..	..	..	..	1/2

COLUMBIA RIVER

30, Omak	a	1:50	10	P	Yes	Yes	..	..	6
31, Okanogan	a	1:50	2	P	Yes	No	1,000	150	..
32, Peach	a	1:33	2	2H	No	No	1,200	300	..
33, Cedonia	a	1:50	15	H	Yes	No	..	..	10
34, Ophir	a, e, f	1:30	6	P	No	No	800	250	..
35, White Salmon	a	1:40	7	H	Yes	No	1,500	..	(5)
36, White Salmon	a	1:50	20	H	Yes	Yes	4,800	15	..

SPOKANE VICINITY

37, Mead	None	..	14	..	..	..	500	125	..
38, Kiesel	a	1:50	3	P	Yes	No	..	..	50
39, Mead	a	1:25	5	H	Yes	Yes	3,500	11	..
40, Foothill	a	1:50	15	P	Yes	Yes	..	..	12
41, Chester	a, b	(3)	8	..	..	..	..	..	10
42, Spokane	a, e	1:50	6	P	Yes	No	5,000	1,250	..
43, Foothill	a, d	1:20	..	2H	No	No	600	140	..
44, Freeman	a, f	1:17	3	H	No	No	..	..	20
45, Green Bluff	a, g	1:30	14	P	Yes	No	7,000	70	..
46, Hillyard	a, h	1:40	30	P	Yes	No	3,000	1,500	..
47, Foothill	a, e, f	1:50	15	P	Yes	Yes	..	..	4

PALOUSE COUNTRY

48, Farmington	a	..	86	P	..	..	..	..	3-10
49, Farmington	None	..	5	..	..	..	..	..	75
50, Garfield	a	1:33	17	P	No	No	2,000	100	..
51, Garfield	a	1:50	8	P	Yes	No	..	..	2
52, Pullman	a	1:33	32	6P	Yes	No	..	..	15
53, Dayton	a, e, g	1:35	100	..	Yes	Yes	..	..	1
54, Walla Walla	a, d, f	1:50	7	P	Yes	No	..	..	5
55, Walla Walla	a, e, f, g	1:25	14	P	Yes	No	..	..	20

NOT IN WASHINGTON

56, Indiana	a	1:17	35	7H	No	Yes	1,800	720	..
57, Colorado	a	1:20	5	2H	No	No	1,250	100	..
58, Idaho	a	..	..	H	..	..	..	..	75
59, Idaho	a, d, f, g	..	80	P	..	..	..	..	2
60, Oregon, Rogue Rvr.	a, f	1:17	7	H	No	No	2,500	75	..
61, Oregon, Rogue Rvr.	a, d, g	1:17	9	H	Yes	No	3,200	4	..
62, Oregon, Rogue Rvr.	a, e, g	1:17	30	P	Yes	Yes	21,000	1,500	..

¹ Large trees. ² Vermorel nozzle. ³ Dust spray. ⁴ Dust spray; very light crop. ⁵ Two wormy apples. ⁶ Poor pressure. ⁷ Friend nozzle. ⁸ Part sprayed.

1910

WENATCHEE VALLEY

Town	Spraying	For- mula	Acres	Power or hand pump	Crook used	Tower used	Total crop, boxes	Boxes wormy	Pct. w'my
1, Cashmere	a	1:50	10	P	Yes	No	7,000	200	..
2, Cashmere	a	1:50	4	P	Yes	No	2,400	1	..
3, Cashmere	a	1:50	10	P	Yes	No	5,500	6	..
4, Wenatchee	a	1:50	2	..	..	..	1,115	5	..
5, Cashmere	a, b	1:40	10	P	Yes	No	4,300	20	..
6, Wenatchee	a, c	1:30	7	2P	No	Yes	3,550	200	..
7, Cashmere	a, d	1:33	7	H	Yes	No	6,500	40	..
8, Wenatchee	a, f	1:17	30	P	Yes	Yes	7,000	350	..
9, Wenatchee	a, f	1:33	36	P	Yes	Yes	31,000	600	..
10, Wenatchee	a, f	1:40	12	P	Yes	Yes	12,000	500	..
11, Wenatchee	a, c, f	1:50	16	P	Yes	Yes	12,500	100	..
12, Wenatchee	a, d, f	1:33	7	P	Yes	No	1,350	170	..
13, Wenatchee	a, d, f	1:33	5	P	Yes	Yes	3,500	70	..
14, Malaga	a, d, g	1:25	5	P	Yes	No	1,540	200	..
15, Cashmere	a, e, h	1:33	30	P	Yes	No	9,870	200	..
16, Wenatchee	a, b, e, g	1:25	6	P	Yes	No	3,000	50	..
17, Wenatchee	a, d, f, g ⁸	1:33	8	P	Yes	Yes	8,000	350	..

YAKIMA VALLEY

18, Grandview	a	1:50	10	P	Yes	Yes	10,000	100	..
19, North Yakima	a	1:40	4	P	Yes	Yes	4,500	45	..
20, Naches	a	1:50	10	P	Yes	Yes	8,727	1	(1)
21, Prosser	a, c, f	1:30	7	H	Yes	No	..	..	50
22, Zillah	a, b, d, f	1:50	40	P	Yes	Yes	8,000	3,000	..
23, North Yakima	a, d, e, f	1:50	12	P	Yes	No	..	..	5
24, North Yakima	a, d, f, g	1:25	80	P	Yes	Yes	13,000	400	..
25, Sunnyside	a, d, f, g	1:33	10	H	No	No	5,000	50	..
26, Wapato	a, b, f, g, h	1:25	5	P	Yes	No	3,100	75	..
27, Prosser	a, e, f, g	1:33	4	H	Yes	No	1,800	300	..
28, Zillah	a, c, f, g, h	..	1	..	Yes	No	5,000	100	..
29, Mabton	a, d, e, f, g	1:33	8	P	Yes	Yes	5,600	200	..
30, Selah	a, b, c, f, g, h	1:25	9	P	Yes	No	5,000	350	..
31, Granger	a, b, d, e, f, g, h	1:10	6	P	Yes	No	2,100	100	..
32, Mabton	a, c, d, e, f, g, h	1:33	3	H	Yes	Yes	..	..	1/2

COLUMBIA RIVER

33, Cedonia	a, d	1:25	15	H	Yes	No	1,200	1	..
34, Peach	a, f	1:25	4	2P	Yes	No	2,000	20	..
35, Omak	a	1:50	12	P	Yes	Yes	..	..	1
36, Lyle	a, c, f	1:17	17	H	Yes	No	1,000	10	..
37, White Salmon	a	1:50	20	P	Yes	Yes	4,000	20	..
38, White Salmon	a	..	3	..	..	..	155	5	..

SPOKANE VICINITY

39, Mead	a	1:20	14	H	Yes	Yes	4,000	40	..
40, Mead	a	1:33	5	P	Yes	Yes	1,000	24	..
41, Rockford	a	..	20	H	Yes	No	1,000	2	..
42, Kieseling	a	1:25	40	P	Yes	Yes	5,000	300	..
43, Willow Springs	a	..	7	H	Yes	Yes	1,200	25	..
44, Seeton	a	..	1/2	H	Yes	Yes	157	0	..
45, Mica	a, g	1:17	15	H	Yes	No	2,000	25	..
46, Freeman	a, d, f	1:25	3	H	Yes	No	574	324	..
47, Hillyard	a, c, f, g	1:33	8	2H	No	No	1,200	200	..
48, Hillyard	a, b, d, g	1:40	30	P	Yes	Yes	4,200	75	..

PALOUSE COUNTRY

49, Hooper	a	(3)	11	..	..	..	10,000	250	..
50, Garfield	a	1:50	20	P	Yes	No	3,000	50	..
51, Garfield	a	1:50	17	P	Yes	No	6,124	50	..
52, Waitsburg	a	1:33	1	P	Yes	No	250	0	(5)
52, Waitsburg	a, d	1:33	30	P	Yes	No	23,000	500	..
53, Dayton	a	1:40	90	P	Yes	Yes	68,000 ⁶	70	..
53, Dayton	a, d	1:40	10	P	Yes	Yes	..	..	(4)
54, Pullman	a, d	1:33	32	P	Yes	No	2,000	5	..
55, Dayton	a, e	1:33	9	P	Yes	Yes	2,000	10	..
56, Spangle	a, d, f	..	20	P	..	..	2,500	65	..

NOT IN WASHINGTON

57, Pennsylvania	a, c	1:25	30	P	Yes	Yes	..	..	1/2
58, Indiana	a, b, f	1:25	12	7H	Yes	Yes	3,000 ⁹	..	1/2
59, Idaho	a, d, f	1:20	80	2P	No	No	14,000	7,000	..
60, Oregon, Rogue Rvr.	a, g	1:17	8	2H	No	No	1,900	50	..
61, Oregon, Rogue Rvr.	a, c, f	1:25	8	P	Yes	No	4,200	25	..
62, Oregon, Rogue Rvr.	a, e, f, g	1:17	16	2H	No	No	6,000	10	..
63, Oregon, Hood Rvr.	a, b, d, f	1:20	40	7P	No	No	15,000	300	..

¹ Checks wormy. ² Vermorel nozzle. ³ Dust spray. ⁴ "Seconds" no wormier. ⁵ Twelve wormy apples. ⁶ Ten earloads. ⁷ Friend nozzle. ⁸ Part sprayed. ⁹ Barrels.

teen growers used 1 spray on 288 acres, with 664 boxes wormy of 30,553, or 2.1 per cent; seventeen growers used two sprays on 263 acres, with 4,394 boxes wormy of 55,200, or 7.75 per cent; five growers used three sprays on 98 acres, with 365 boxes wormy of 1,550, 23 per cent; five growers used four or more sprays on 41 acres, with 1,095 boxes wormy of 16,210, or 6.7 per cent. In 1910, twenty-one growers used 1 spray on 309 acres, having 954 boxes wormy of 130,628, or 0.73 per cent; ten growers used two sprays on 196 acres, having 2,101 boxes wormy of 93,500, or 2.24 per cent; ten growers used three sprays on 118 acres, having 1,489 boxes wormy of 40,834, or 3.64 per cent; thirteen growers used four to seven sprays on 212 acres, having 4,700 boxes wormy of 55,800, or 8.42 per cent.

Adding together the results of the two years shows that a single application

of spray has averaged but 1 per cent of loss, two applications have averaged 4.5 per cent, three application the same, while those who gave four or more sprayings lost 8 per cent of their crop. Paradoxical as it may seem, the more sprayings given the poorer the results. Professor C. P. Gillette has gathered similar statistics for Colorado, and writes that his results tally exactly. However, the explanation is simple. One grower concentrates all his efforts on the single application, the other, intending to depend on later applications anyway, slights the spraying of the blossoms.

Practically all the fruit growers of the Northwest use arsenates of lead now. Our own recommendations are to use one pound to fifty gallons, but the majority of orchardists, influenced by the directions on the container, apply it stronger. Experimental tests

have shown that the strength of the spray is immaterial. When well applied one pound to eighty gallons has given us as complete immunity from worms as one to ten. The results of the practical fruit growers bear out this assertion, as is shown by the following summary: twenty-six growers used 1 pound to 50 gallons on 331 acres, with 5,007 boxes wormy out of 87,554 boxes, or 5.6 per cent loss; sixty growers used 1 to 2 pounds to 50 gallons on 1,009 acres, with 10,056 boxes wormy out of 305,544 boxes, or 3.3 per cent loss; fourteen growers used 2 to 5 pounds to 50 gallons on 247 acres, with 8,305 boxes wormy out of 60,300 boxes, or 13.6 per cent loss. The less successful grower is the one who inclines to the stronger formula. I have noticed again and again that in criticising his own methods the less successful grower always ascribes his worms to too weak a spray or to too few applications. Next year he intends to give a fifth spraying in August and will try three pounds to the barrel. What he needs instead is to give better spraying, not oftener. The most popular strength of spray in Washington is three pounds to one hundred gallons, but one-third of the growers are using it stronger than that. A very small percentage still use the dust spray for the late applications.

The success of the Western method depends upon forcing spray through the crown of stamen bars and into the lower calyx cup. This cannot be done by low pressure, or by a misty spray, or by throwing the spray up into the tree. To wet the inside of the blossom demands that a coarse spray be shot down from above the blossoms with considerable force. To get a coarse, penetrating spray our growers have practically all abandoned the Vermorel style of nozzle in favor of the Bordeaux. The seven growers reported above who sprayed with the Vermorel nozzles lost 1,690 boxes out of the crop of 13,400 boxes, or 12.6 per cent. For the same period the hundred growers who used the Bordeaux nozzle had an average loss of 3.7 per cent. 72 per cent do their spraying with gasoline engine power, and many of them maintain a pressure of between 250 and 300 pounds, a thing unheard of a few years ago. 91 per cent have adopted the "crook," a little device I first suggested to the Bean Spray Pump Company to manufacture, the popularity of which is thus attested. This attachment places the nozzle at an angle of forty-five degrees, and greatly facilitates directing the spray down into the blossoms. Many a grower has remarked that the crook is worth its weight in gold to him. Where the trees grow taller than the reach of the extension rod a "tower" is used, and this has been adopted by 42 per cent of the Washington growers. That the number is not larger speaks for the low-headed, low-trimmed trees so characteristic of the Western commercial orchard. The tower needs to be tall enough to enable the topmost branches to be sprayed. Many of the growers

simply spray from the tank. Often the blossom spraying is given in this way and then immediately repeated from the ground. The importance of filling the calyx cup is further brought out by the experience of three growers who omitted the calyx application. These men averaged 25, 50 and 75 per cent loss.

The lesson that this study teaches is this: The calyx cup must be filled, and this demands high pressure, the Bordeaux nozzle, crook and tower. The power sprayer is more conducive to success than the hand pump. Two to three pounds of arsenate of lead will be amply sufficient to one hundred gallons, and it makes no difference what particular brand of lead you use. The spraying must be done immediately after blossoming, at which time every blossom must be filled. If these details are neglected no amount of after spraying will guarantee 100 per cent returns. It is not the number of times you spray that counts, but how well you give the blossom treatment. This is the theory. The analysis of the growers' reports shows that the theory is consistent with practice.



Avenue of Prize Winning Carloads of Jonathans and Mixed Varieties, Exhibited by Riehey & Gilbert Company, North Yakima, Washington, at the National Apple Show, Spokane, Washington, in 1910

Further back in the picture is the first prize winning carload of Winesaps, of which we were unable to secure a picture. The Yakima Valley is one of the largest apple producing sections of the Northwest and will have a splendid exhibit at the Spokane National Apple Show this year, November 23 to 30

Apple Growing and Orchard Management in New England

By C. D. Jarvis, Experiment Station, Storrs, Connecticut

THE business of fruit growing is usually regarded as one of the most specialized lines of agriculture and is commonly conducted on small farms under intensive culture. This, however, is not generally the case in New England. Here a large proportion of the fruit comes either from very large plantations, as is the case with peaches, or from small orchards on diversified farms, as is the case with apples. The apple orchards of New England vary in size from a few trees around the house or along a line of fence to the commercial plantations of many acres. The average size probably does not exceed one or two acres. The chief advantage of specialization in agricultural enterprises is that the farmer may become an expert in his particular line. This feature as applied to fruit growing is offset by many disadvantages. The fruit crop requires attention but part of the year, and there is much loss in unused capital, labor, teams and tools during the remainder of the year. In many cases fruit could be produced much cheaper if certain other crops were grown, or if some kind of livestock were kept. One of the most successful farmers of Connecticut has formulated a system on his farm that seems to be very satisfactory. His principal business is peach growing. For the purpose of utilizing his capital, goods and labor the year round he grows grass and fattens lambs. The men and teams are kept busy in the hay fields from the time cultivation ceases in the orchards till peach picking commences. After the peach harvest is over their attention is given to the care of the lambs

and the hauling of the hay to market and the manure to the field.

The small orchard on the diversified farm is in many respects a hopeful condition. Unfortunately the apple orchard in this section of the country has generally been regarded as a side issue and any revenue derived from it as clear profit. A five or ten-acre apple orchard, when regarded as a component part of the farm system and when properly cared for, is the ideal condition. There are many farms in New England with orchards of this size, or larger, that have proved unprofitable for the reason that they do not fit properly into the general farm system. The farmer must work out his own system, keeping in mind his peculiar conditions and adaptations. If he is an apple specialist he should aim to have a succession of varieties to lengthen out the season, and he should select such other interests as will most effectively fill in the gaps and avoid the familiar slack seasons. The crops he selects may not be so profitable as apples and may produce very little revenue directly, yet they make it possible to keep in readiness for the rush season a larger corps of workers, and to keep teams and tools in use without loss.

The management of an apple orchard may be likened to a chain, the weakest link of which is the measure of its strength. The following are some of the factors upon which successful orcharding depends: The choice of varieties, proper location, good drainage, sufficient plant food and moisture, good physical condition of the soil, proper pruning and thinning and the

control of insects and diseases. Each of these factors, and probably many others, may be considered a link in the chain of operations concerning orchard management. The importance of any one of these factors depends upon its relation to others. For example, in an orchard that has been well cared for in every respect except spraying the important factor, or what may be called the limiting factor, is the control of insects and diseases. In other words, it is poor economy to spend much time and money on the care of an orchard and allow the apples to be eaten by worms or disfigured by disease. The important point about the whole matter, then, is in the determination of the limiting factor, and when this is found to bring it up to the level of the other factors. The expenditure of a few dollars on the limiting factor will usually produce better results than the expenditure of many times the amount on other factors. Some factors are beyond the control of man, and even of those under his control it is often difficult to discover the limiting one. For this reason every grower should be an experimenter. The differences of opinion among experts concerning orchard methods arise mainly from the varying conditions under which apples are grown. The methods that give best results with one grower may prove entirely unsuitable to other growers who are working under different conditions. It is the business, then, of every grower to determine the methods best adapted to his peculiar set of conditions. Before spending large sums on any one item he should determine by experiment whether it



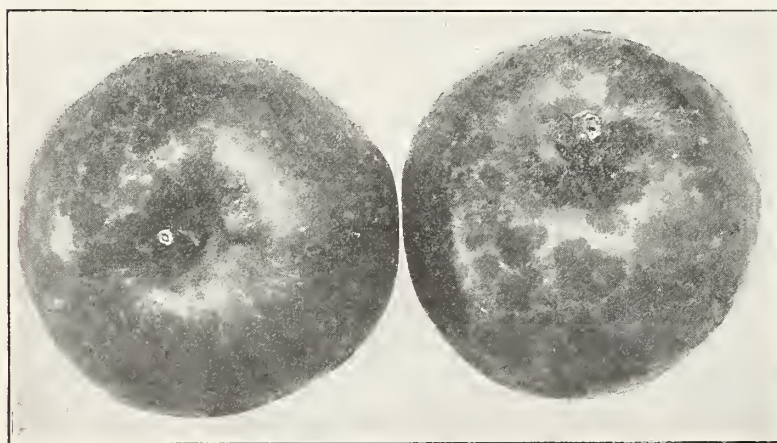
Ideal Baldwin Apple Tree, That Has Been Trained Properly from the Beginning



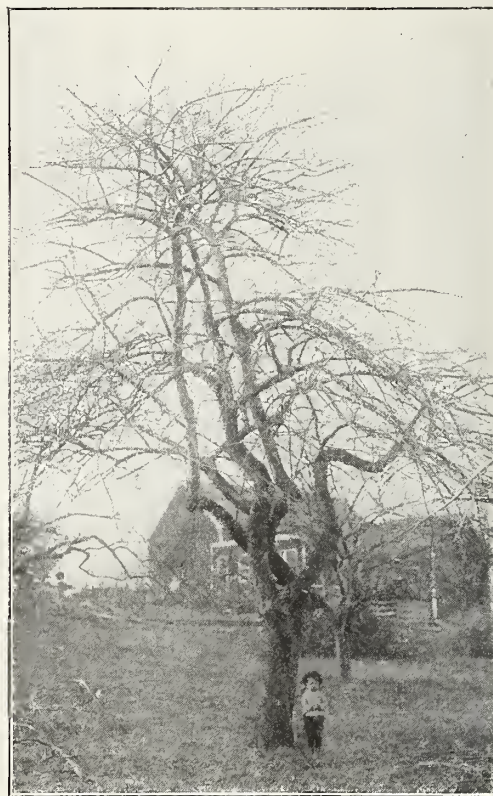
Open Center Habit of Growth, Making a Well Balanced Tree



Apple Scab on Fruit and Leaves



Sooty Blotch Disease on the Apple



A Tree That Has Been Pruned from Beneath Instead of from Above



Injurious Effects of Bordeaux Mixture on Apples

will pay. The proposed treatment may be tried on a small part of the orchard and if it proves satisfactory may be extended throughout the whole orchard the following year. The result, however, of such an experiment may not always be conclusive, for the limiting factor in one section of the orchard may be very different from that in other sections. For example, one section of an orchard may be low and wet, and in such a case nothing would

give as good results as under-draining; in fact the trees would not be likely to respond to any other kind of treatment. It is important, therefore, when conducting experiments of this kind to make sure that all the factors are the same throughout the orchard, except the factor under examination.

The various systems of orchard culture that have been the subject of controversy for so many years may be classified as follows: 1, clean culture;

2, tillage with cover crops; 3, sod culture. Clean culture, as its name implies, consists in clean culture throughout the growing season. Cultivation commences as soon as the soil may be worked in the spring and continues till about the middle of August. It is recommended especially for sections where the rainfall is light during the growing season. By maintaining a loose dust mulch on the surface the system is very effective in conserving

moisture. On the other hand, the continuous cultivation tends to deplete the supply of plant food and humus, or decaying vegetable matter. To maintain the fertility of the soil under this system requires liberal applications of stable manure or some substitute. This system, as practiced by some growers, is very similar to the next to be described—tillage with cover crops—and gives fairly good results. These growers cease cultivating about the middle of July or the first of August and allow the weeds to grow up and cover the ground. The weeds here assume the function of a cover crop. The clean culture system, pure and simple, is not recommended for Connecticut.

Tillage with cover crops is the same as the one previously described, except that the last cultivation occurs about the middle of July or the first of August. With it some kind of a cover crop is sown, which as it develops takes up and holds the soluble plant food, forms a protective cover to the soil, and, when turned under the following spring, contributes to the supply of plant food and humus. This system is the one followed by the most successful apple growers in the best apple sections. For Connecticut, and probably New England as a whole, this system, with some modifications, will probably give best results.

Sod culture in its most ruinous form is the one commonly practiced in New England, and is largely responsible for the unproductive condition of the ordinary farmer's orchard. The apple specialists as a rule favor the tillage system, yet there are many commercial growers who hold to some form of sod culture. The special advantage of sod culture is the possibility of producing fruit of better color, but this is probably offset by the possibility of increasing the yield by means of tillage. It is remarkable that the fruit from sod orchards has carried off many of the premiums at recent fruit exhibitions in the East. This is especially true at fall fairs that are held too early for winter varieties grown under cultivation. The main purpose of growing apples, however, is not to win premiums, and the man who tills his orchard must get his reward in higher profits. The questions for the grower to settle are, which system is best suited to his conditions—his location, his soil, his markets and his other interests—and which will give him the best return for the capital invested.

There are probably many orchards in New England situated upon washy slopes where some form of sod culture is the only feasible method. It is probable also that many more of the rugged and washy hillsides will eventually be planted to apples. This need not con-

cern us now, however, for there are thousands of acres of ideal orchard land available in every state of New England, and so long as this condition prevails it would seem advisable to select for orcharding land upon which the regular operations may be most conveniently and expeditiously performed. There is often more or less washing, however, on some of the gentle slopes, especially where the soil is of an impervious nature. Serious trouble from this cause usually may be prevented by cover cropping or by leaving strips of sod along or between the rows of trees and at right angles to the slope.

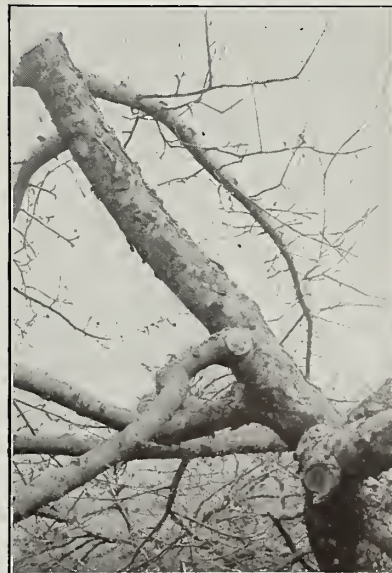
Since there are so many different forms of sod culture it seems advisable to discuss at this time some of the more common practices, such as the sod mulch, the plain or grass mulch, the pasture method and grass removal. The sod mulch method, as understood by the writer, consists in seeding the orchard down to grass and clover, in mowing the green herbage once or twice during the summer, and leaving it as a mulch under and around the trees. This is distinct from the plain mulch or grass mulch method, which depends upon foreign material to form the mulch. One of the most enthusiastic advocates of the sod mulch method and one who has been eminently successful is Mr. Grant Hitch-



A Fairly Common Form of Apple Tree
The white lines indicate where the chief cuts should be made in pruning



A Neglected Wound
Decay starting at this point has extended far down the trunk



In heading back upright branches the cut should be made just beyond a branch extending outward



One of the Earlier Planted Commercial Orchards, and Still Very Productive
The trees have plenty of room and have been well cared for



An Apple Tree in Which the Central Leader Has Been
Allowed to Develop

ings of New York. Success with this method depends largely upon the amount of herbage produced with which to form a mulch when cut. To insure the required amount the occasional breaking up and reseeded of the ground is necessitated. It is not likely to succeed well with old orchards, especially those that are closely planted, for the reason that there will not be enough sunlight admitted to insure a good growth of herbage. The New York Agricultural Experiment Station is making a comprehensive study of this method as compared with the more orthodox practice of tilling and cover cropping. A preliminary report covering five years' observation on one orchard contains some very interesting statements, a brief summary of which may not be out of place here. The tilled plot averaged 36.3 barrels per acre more than the sod mulch plot. The apples on the tilled plot were not so highly colored, but were much larger, of better quality and kept better in ordinary storage. It took 434 apples grown on sod to fill a barrel, while only 309 from the tilled plot were needed. The trees on the tilled plot made a much larger growth than the trees in the sod area. The average cost per acre for the two methods of management, not including harvesting, was \$17.92 for the sod and \$24.47 for tillage, giving a difference of \$6.55 in favor of the sod. The average net income per acre for this sod plot was \$71.52, for the tilled plot \$110.43, a difference of \$38.91 in favor of tillage. It should be borne in mind that these statements are based on the behavior of one orchard only. Another orchard with a different set of conditions may behave very differently. It is a good indication, however, of what may be expected from such treatment of a Baldwin apple orchard located in Western New York and situated on a fertile Dunkirk loam soil with sandy sub-soil.

The plain mulch method is what is frequently called the mulch method, or the grass mulch method. As the pre-

viously described method is necessarily a grass mulch method it has seemed advisable to use the term plain mulch in speaking of this method. Much of the controversy in the agricultural press has arisen from the confusion of names regarding mulch methods. In contrast to the sod mulch, this method consists in covering the ground under and around the trees with some kind of coarse material that has not been grown in the orchard. Coarse stable manure, marsh hay, corn stalks or any kind of straw may be used for the purpose. The system is especially adapted to grain growing sections, where straw is abundant. Success with this method

depends upon having such a thick mulch that no weeds or grass will grow in the orchard. The exponents of the system claim that the natural fertility of the soil may be maintained in this way, but it should be borne in mind that when we remove ten to fifteen barrels of fruit per tree we are going beyond natural conditions, and some additional plant food is likely to be required.

The pasture method is probably the most common method of orchard management in New England. It is the regular practice with the diversified farmer or the specialist in lines other than fruit growing. It is so common that it requires very little comment. Some growers take off a crop of hay and then pasture the orchard. The system depends upon the manure from the stock to keep up the fertility. Where large herds are kept and where supplementary food is supplied, together with good care in other respects, fairly satisfactory results may be expected. The common practice, however, is to turn in a few head of cattle and expect them to get a living from the orchard. Excellent results have been obtained in many cases where hogs have been allowed to run in the orchard. Hog pasturage is very similar to tillage, for the animals keep the soil well loosened up. Hogs in an orchard serve a useful purpose also in destroying many injurious insects that may be within the fallen fruit. The apple maggot is more easily kept under control in this way than by any other known method. Hogs often cause injury to the trees by rubbing off the bark, but this may be averted by feeding the animals some distance from the orchard, the rubbing usually being done just after feeding. Sheep are objectionable in an orchard, for they pasture the grass so closely and pack the ground so hard that the soil quickly dries out. Some growers have had good results from keeping poultry in the orchard, but where trees are located in crowded hen yards they are

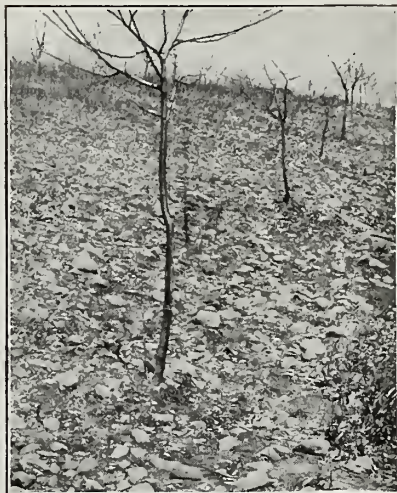


Using the "Loppers" in Cutting Back
the Higher Branches

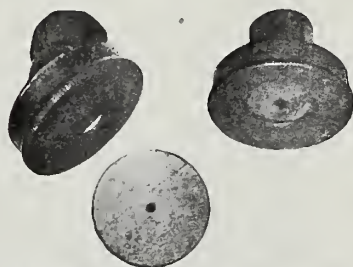
likely to grow too rapidly and to produce very little fruit.

A large proportion of the "home orchards" are cared for after what may be called the grass removal or hay method. It is more disastrous to the trees than the pasture method, for the grass is removed and not even the droppings from the animals added. Trees handled in this way will soon show signs of neglect. The owners of such orchards usually regard the hay as the important crop, and any revenue from the apples is looked upon as clear gain. Many of these neglected orchards are still capable of being renovated.

It is a common notion that the sole purpose of cultivation is to kill weeds. In reality the killing of the weeds is looked upon by the best orchardists as an incidental function of cultivation. It improves the physical condition of the soil, releases plant food, conserves moisture, facilitates drainage and kills weeds. The method of preparing land for young orchards has been discussed in a former paper and needs no further comment. As the trees approach the bearing age it is sometimes advisable to relax in our rigorous cultivation to start the trees into bearing. In our efforts to develop a large bearing structure it is possible that we are growing our trees too rapidly. A tree that has been allowed to make a normal growth is likely to come into bearing earlier and to develop into a stronger and more rigid structure than a tree that has been abnormally forced. Bearing trees also should be encouraged in making a uniform annual growth. With established orchards the orthodox treatment among the commercial fruit growers consists in plowing the ground in the spring and in keeping the soil well cultivated until mid-summer, when a cover crop is sown. As a rule the plowing is done as soon as the soil is dry enough to be worked. Fall plowing is practiced with good results in many sections of the country, especially in locations where the ground is generally covered with snow during winter. The chief advantage of the practice is that it gets the work out of the way of the spring rush and exposes the soil to the pulverizing action of the winter's freezing and thawing. For sections where the ground is bare of snow the greater part of the winter this practice is not recommended. The



Side-hill Orchard, Showing the Need of a Cover Crop



"Friend" Angle and Straight Nozzles

ordinary beam plow is better suited to the purpose than a sulky plow. Most orchard soils may be improved by sub-soiling. This operation is performed by following the ordinary plow with a sub-soil plow. Sub-soiling deepens the soil, giving the roots a larger feeding area. It is especially valuable in the younger orchards, but probably has very little effect upon old trees. Where the sub-soiler is not used the ordinary plow should be set to run as deeply as practicable. With a view of maintaining an even surface it is the custom to plow toward the trees one year and away from them the following year. It is also advisable occasionally to plow crosswise of the orchard.

The subsequent tillage is usually done with some kind of a cultivator. Probably the best tool to use for the first cultivation after plowing is a disk or cutaway harrow, although a spring-tooth harrow is well suited to the purpose. Some growers use a plow only once in three or four years and depend upon the cutaway harrow for the

breaking up of the soil in the spring as well as for subsequent tillage. The cutaway harrow is also used to advantage for breaking up the turf in orchards that have been in sod for so long that the roots are too near the surface for comfortable plowing. Some manufacturers are now making extension cutaway harrows that will project beneath low-headed trees. The later cultivations are intended particularly for the purpose of making a loose soil mulch that will prevent the evaporation of moisture from the soil, and for this purpose a lighter tool will do. Where the soil is in a good pliable condition a harrow of the Acme type, or even a spike-tooth harrow, may be most suitable. It is important to go over the ground with one of these tools soon after each rain, and thus save as much of the added rainfall as possible. In no case should a crust be allowed to form on the surface.

There is a common notion that trees should be cultivated close to their base. In order to facilitate cultivation near the trees some growers have been known to cut off some of the best limbs on the trees. A cleanly cultivated orchard is pleasing to the eye, and the keeping of weeds and grass away from the trunks is a protection from mice. But cultivation under the trees is of little importance so far as nutrition is concerned, for the feeding roots are located beyond the spread of the trees. This, of course, does not apply to young trees, which should always be given clean cultivation. The best practice is to cultivate as near the trees as possible without scraping off bark or fruit. The few weeds that happen to develop in the shade of a modern low-headed apple tree are not likely to seriously affect either the appearance of the orchard or the proper development of the trees. About July fifteenth cultivation should cease to give the trees a chance to ripen up their wood. In very dry seasons it may be advisable to continue cultivation until about the first of August. With the last cultivation it is customary to sow clover, vetch, cowpeas, rye or some such crop, to be turned under the following spring.

A close examination of the orchard soils of New England reveals a marked deficiency in vegetable matter or humus. There is no more effective way of increasing the amount of humus



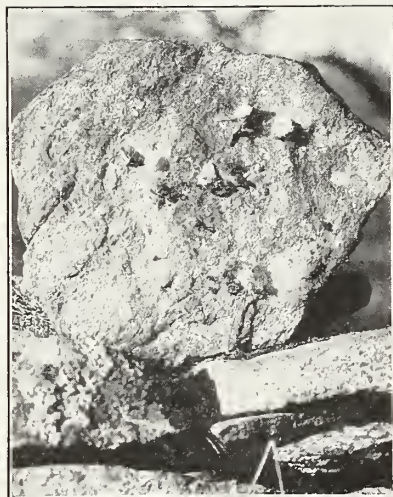
A Well-made Brush Harrow. A very satisfactory tool for covering the seed



Hairy or Winter Vetch as an Orchard Cover Crop



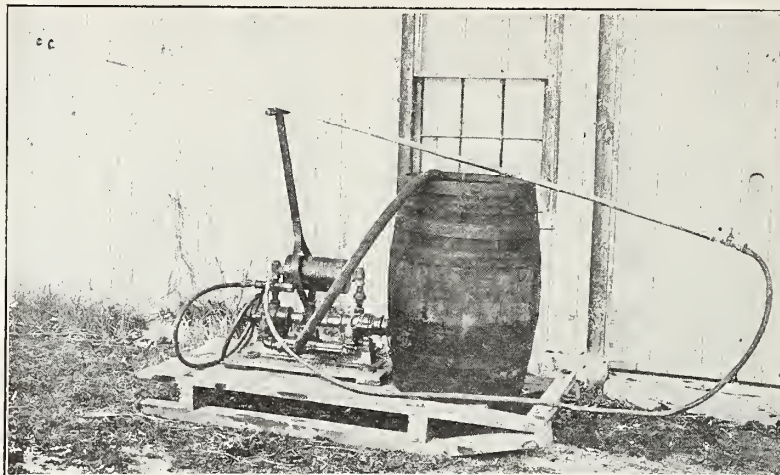
Four Types of "Loppers" from Which the Handles Have Been Removed



An upturned stone on wall surrounding an orchard, showing several hibernating codling moths



Tool with triangular blade for scraping rough bark from old trees



Double Cylinder Spray Pump. A very convenient and powerful outfit



Arlington Hand Pump with Two Leads of Hose

and the ultimate fertility of the soil than by the judicious use of cover crops. Any crop that is sown in the orchard for the purpose of turning under in the spring is called a cover crop, and should not be confused with what is commonly called a "catch crop," which is grown to be harvested. Catch crops are commonly and profitably grown in young orchards before the trees require the whole area. A cover crop serves several useful purposes, of which the following are worthy of special attention: (1) The growing of a cover crop in an orchard tends to check the growth of the trees in late summer and induces early maturity of the wood. Trees that are allowed to make a late growth are likely to be injured by freezing during the winter. The checking of the growth is effected by the cover crop competing with the trees for moisture and plant food. The maturing of the fruit on heavily loaded trees usually affords check enough, especially in dry seasons, and for this reason it is sometimes advisable to delay or omit entirely the planting of a cover crop. (2) A cover crop, especially one that lives over winter, takes up much of the soluble plant food that is likely to leach away during the winter and early

spring. The loss of the plant food by leaching is considerable, especially on light porous soils. A cover crop collects this plant food and holds it until spring, when it is returned to the soil in the form of "green manure." (3) A cover crop also preserves fertility by preventing surface erosion. If land is allowed to remain bare over winter the spring rains and the rapid melting of the snow are likely to wash away much of the surface soil, carrying with it large quantities of plant food. (4) A cover crop acts as a blanket and holds the snow during the winter, preventing root injury. Alternate freezing and thawing seriously affects the roots of fruit trees and is best prevented by a good covering of snow. (5) A cover crop, when turned under, adds humus to the soil, improves its chemical condition and produces conditions more favorable for the development of certain useful micro-organisms. The moisture-holding capacity of a soil is dependent largely upon the amount of humus present. When a rigorous system of cultivation is the practice the supply of humus in the soil is likely soon to become exhausted, and the most satisfactory way of maintaining a supply is the growing and turning under of cover crops. (6) Cover crops of the

leguminous or nitrogen-gathering type contribute to the supply of nitrogen in the soil. Nitrogen is the most expensive kind of fertilizer that the apple grower uses, and by growing in the orchard such cover crops as clover, vetch and cowpeas the expense bill for this chemical may be largely reduced, if not entirely eliminated. Again, certain cover crops like turnips and rape have the ability to assimilate plant food, which is in such form that other plants cannot make use of it. When these crops are turned under and become decayed they supply this plant food in a more available form.

There are two distinct classes of cover crops. There are those that live over winter and commence growing in early spring, like the clovers, vetches and rye, and those that die down in the fall, like cowpeas, soy beans, turnips, rape and buckwheat. Many of those of the latter class make a very large growth and in many respects are superior to those of the former class. The winter cover crops, however, furnish better protection to the soil and roots during cold weather, and on the whole are better suited to New England conditions. Cover crops may also be classified according to their ability to contribute to the supply of plant

food in the soil. Plants belonging to the legume family, such as clover, alfalfa, vetch, peas and beans, have the power of assimilating nitrogen from the air, and when turned under contribute to the supply of this valuable form of plant food. It will be observed that some of these nitrogen-gathering crops belong to the winter group and some to the fall group. Under certain conditions a non-leguminous crop may be more serviceable than a nitrogen-gathering one, and in like manner a fall cover crop may often be just as useful as a winter one. If the trees were not making sufficient growth a leguminous crop would probably be desirable, while if the trees were making sufficient growth and there appeared to be a lack of vegetable matter in the soil a rapid growing non-leguminous crop, such as winter rye, would be more suitable. In locations where a good covering of snow may be depended upon, and on soils that are not likely to wash, a fall cover crop, such as turnips, rape, buckwheat, cowpeas, soy beans or horse beans, would be very suitable. The three last named crops are nitrogen-gatherers, and would be more suitable than the former three if the trees were not making satisfactory growth. The clovers make good cover crops, and in this section of the country are more generally used than anything else. Some prefer the mammoth clover

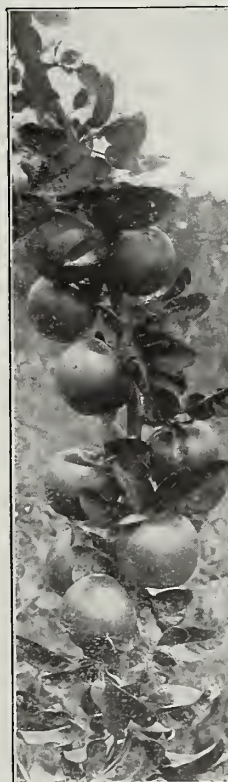
on account of its making a larger growth. Others prefer the common red clover, while still others pin their faith in alsike. Crimson clover is largely used, and in sections where it may be depended upon to stand the winter is undoubtedly the best of its class. It is a very rapid grower, but in most sections of New England it is likely to winter-kill, and for this reason is not generally recommended. The safest plan probably is to mix together two or more kinds, always including a little crimson. Some growers prefer to mix in a little turnip seed. The turnips grow rapidly and protect the young clover plants from the hot sun. A suitable mixture may be made up of mammoth and crimson clover six pounds each, alsike three pounds and cowhorn turnips three ounces. Alfalfa is so exacting in its requirements and so slow in starting its growth that it is seldom used for cover crop purposes except in combinations. Hairy or winter vetch, in many sections, is becoming a popular cover crop for orchard purposes. It is an annual and thrives well at low temperatures. It belongs to the nitrogen-gathering group, and owing to its prostrate habit of growth and its habit of growing in late fall and early spring is well suited to cover crop purposes. It is better adapted to heavy soil, but when sufficient attention is given to the preparation of the

ground will thrive remarkably well on the lighter soils. The harvesting of the seed is a difficult operation, especially in New England, and for this reason the seed is usually very high in price. Some orchardists have been able to grow their own seed by sowing rye and vetch together. The rye supports the vetch, facilitating the work of harvesting.

By many orchardists the cowpea is regarded as one of the best plants for cover crop purposes. Of the autumn group it is undoubtedly the most satisfactory. It is a hot weather plant and thrives remarkably well on light soils and in dry seasons. This is an important point in its favor, for it is a common occurrence to have very dry weather about the time the cover crop is expected to make its growth. The seed may be sown broadcast or it may be drilled in. The "Whippoorwill" variety is probably the best for cover crop purposes. A combination of cowpeas and clover makes an ideal cover crop. The former should be sown in drills about two feet apart and not later than the middle of July. About the first of August the clover should be sown broadcast between the rows and harrowed in. This harrowing will be of great benefit to the cowpeas, giving them a good start. In very dry seasons the sowing of the clover may be deferred and cultivation may be



Dwarf Apple Tree That Has Been Affected by Borers and as a Result Has Assumed the Fruit-bearing Habit



Small Branch Bearing Ten Apples
This number should be reduced by half



Same Branch After Five Apples Have Been Removed



Good Type of Pruning Saw



Just before the opening of the blossoms. Almost too late for the first summer spray



Apple blossoms just after the falling of petals; best time to spray for codling moth



Almost too late for the most effective treatment. Observe that the calyx cup is nearly closed

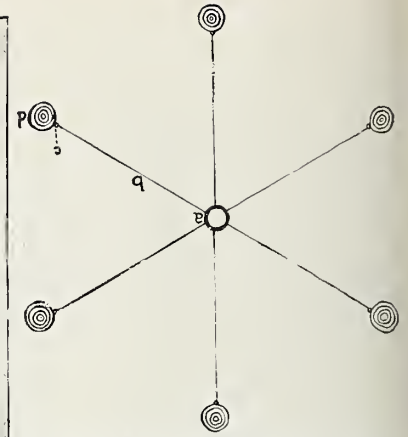
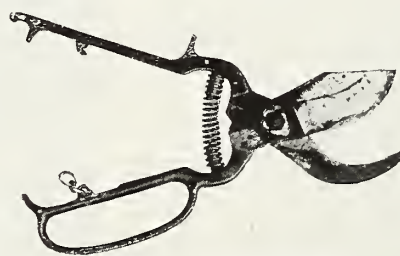


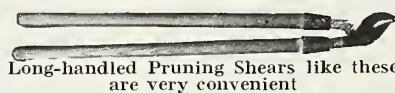
Diagram showing method of bracing trees that have assumed the open center habit of growth. a, Half-inch harness ring; b, No. 12 galvanized wire; c, Eyelet screw; d, One of the main branches

continued between the rows. If it is deferred too long the clover is not likely to become well established before winter sets in and is likely to be killed before spring. Under such conditions rye would probably give best results. About one bushel of cowpeas and twelve to fifteen pounds of clover seed will probably be about the right quantity per acre. When frost comes the cowpeas will be killed, leaving the clover in possession of the ground. Canada peas, soy beans and horse beans are sometimes grown as cover crops. They are nitrogen-gatherers and belong to the fall group. For Connecticut conditions none of them are so well adapted as the cowpea. Rye is probably the most reliable of all cover crops, and among those of the non-leguminous class it is the most satisfactory. The most important requirement of a cover crop is that it makes a cover, and where other crops fail rye may usually be depended upon. The greatest objection to this crop is that it sometimes makes such a large growth in the spring that it is difficult to turn it under. This seldom happens except with the farmer who is habitually behind with his work. Buckwheat, like rye, is a dependable crop, and is largely used by the apple growers of Western New York. It has a pulverizing influence upon the soil and is useful in "smothering" weeds. It does well on almost any kind of soil, and on account of its ability to grow on very poor soils is often called the "poor man's crop." The "poor farmer's crop" would seem to be a more suitable appellation. It is not advisable to sow buckwheat in an orchard until August first or later. If sown earlier it may mature its seed before frost comes, and such seed will cause trouble in the spring. Buckwheat contributes to the soil very little vegetable matter, for after the first frost it is difficult to find the remains of the crop. Turnips and rape are very similar, and are sometimes used for cover crops. They are more useful when sown in combination with clover than when grown by themselves. They continue growing late in the fall and furnish good protection to the clover plants. Their chief value lies in their ability to attack and

break up insoluble compounds that other plants cannot use. Whether grown alone or in combination the greatest care should be exercised in using just the right quantity of seed. Those who have not had experience in sowing turnips and rape are almost sure to use too much seed. Not more than one pound of turnip seed should be used to the acre, except with the cowhorn type. Six pounds of rape seed to the acre is sufficient. Oats, barley and corn are occasionally used as cover crops, but have very little to commend them. They draw heavily upon the moisture of the soil when the fruit is maturing and are likely to affect the yield seriously. The quantity of these different seeds in pounds to the acre is as follows: Mammoth clover 12, common red clover 12, alsike clover 12, crimson clover 15, alfalfa 20, cowpeas 90, soy beans 90, horse beans 90, hairy or winter vetch 50, summer vetch 60,



Good Type of Pruning Shears



Long-handled Pruning Shears like these are very convenient



An Apple Tree That Has Been Killed by Hogs Rubbing Off the Bark

Canada peas 90, rye 90, buckwheat 60, rape 6, turnips 1.

Many growers have become discouraged after one attempt at growing a cover crop. In many cases the soil is so lacking in vegetable matter, and consequently dries out so thoroughly in the summer that it is difficult to get a "catch." Under such conditions it would probably be safer to use rye or buckwheat. The amount of vegetable matter added by the turning under of either of these crops will improve the soil to such an extent that clover or vetch may be expected to thrive well the following year. It is remarkable that the second attempt at growing clover is usually more successful than the first. When the soil has been properly handled during the early part of the season there is not likely to be any trouble in getting a catch. An ordinary smoothing harrow is probably the best tool with which to cover the seed of most cover crops. Many growers have had excellent results from using the brush harrow, especially with the smaller seeded crops, such as clover, turnips and rape. A well made brush harrow is recommended whenever it may be depended upon to cover the seed deeply enough, for with its use there is less likelihood of "barking" the trees. In dry seasons it is sometimes necessary to roll the ground after seeding. When the trees are bearing a good crop of fruit this would be an unwise procedure, for the soil moisture would be brought to the surface and lost by evaporation. If it should seem necessary to roll the ground after seeding it would be well to follow with a weeder or some similar tool soon after the seed has germinated.

Of all the intricate problems relating to orchard management that of feeding the apple tree is probably the most perplexing. To a large proportion of the New England farmers this problem has never presented itself, for they have assumed that the orchard did not require fertilization. The specialized apple growers are just coming to realize the peculiar fertilizer requirements of the apple and the importance of ascertaining the fertilizer requirements of their various orchard lands. It is not the purpose of this article to



Crimson Clover as an Orchard Cover Crop
The bare patches show where the plants have been killed out during the winter



The Cowpea as an Orchard Cover Crop

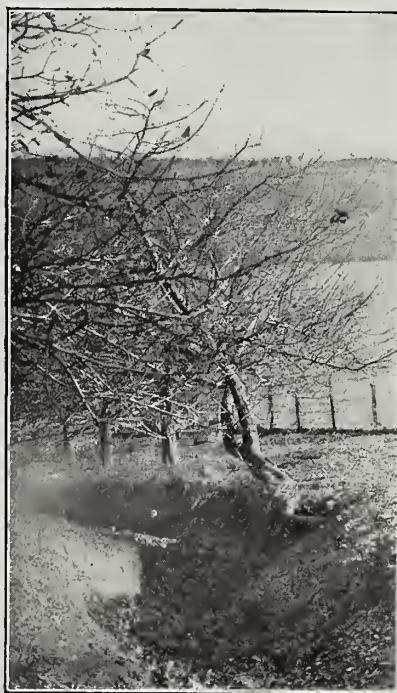
discuss the principles of feeding plants. It is enough to say that in general plants require three elements of plant food, and the apple tree is no exception. These elements are nitrogen, potash and phosphoric acid. While not usually considered a necessary element of plant food, which must be supplied, lime is of much benefit to most crops, and its value should be considered when buying fertilizers. If these elements are not in the soil in available form they must be applied. It is not only necessary that they be present in the soil, but they must be in a soluble form, for in such form only can plants make use of them. Some kinds of fertilizers dissolve readily when applied to the soil. There are other kinds that become available gradually and some others that are so nearly insoluble that most plants cannot make use of them. The apple, being a long lived crop, can make use of the slow working fertilizers, but the tendency among careful apple growers is to use soluble fertilizers and apply them just when needed. The experienced apple grower who keeps a close watch of his trees will probably get best results from soluble fertilizers, but the average farmer will do well to adhere to the use of fertilizers that become available gradually. The various kinds of commercial fertilizers contain one or more elements of plant food in varying proportion. With our present system of fertilizer inspection the percentage composition as given by the dealer may be depended upon. In figuring the relative value of different kinds or brands of fertilizers it is always necessary to know the percentage of plant food that the sample in question contains. Farmers are inclined to buy low priced fertilizers, while in many cases, especially when they are to be shipped long distances, the higher priced brands would be much cheaper. The fertilizer dealers frequently advertise ready mixed fertilizers for various crops, and for the average farmer these may be most suitable. This is oftentimes an extravagant method, however, for seldom will we find two orchards requiring the same treatment. The growers who are prepared to study the

fertilizer requirements of their various fields and crops will do well to mix their own fertilizers.

While most of the orchard lands of New England are likely to be in need of all three elements of plant food there may be a few, especially those on the lower levels, where the soil is usually deeper, that are still well supplied with potash and phosphoric acid. The number of such orchards are so few that it would hardly seem advisable to take them into consideration. There are, however, many soils that are especially rich in some one form of plant food, and for this reason the fruit grower should try the effect of certain fertilizers on his particular soil. If a crop fails to respond to a particular kind of fertilizer the indication is that there is sufficient plant food of that character in the soil. Many soils are sadly deficient in nitrogen and vegetable matter, and respond promptly to the turning under of a crop of clover, even without the application of other

forms of fertilizer. Soils that do not respond to such treatment are probably deficient in potash, phosphoric acid or lime. The deficient element or elements may be ascertained by the use of test plots. The important point in this regard is that it is a wasteful practice to apply a complete fertilizer when there is a good supply of one or more elements already in the soil. It should also be remembered that the application of one or more forms of plant food, although deficient in the soil, will produce little or no effect unless all the necessary elements are present. In like manner, the application of all necessary elements of plant food will produce little or no response if there is any serious deficiency in the general management of the soil. In other words, the best results are obtained only when good treatment is given all along the line. Stable manure is the standard fertilizer of the diversified farmer and the stock raiser. The commercial fruit growers, however, rarely use this form of fertilizer in their orchards. The chief objection to its use is that it is relatively rich in nitrogen, which becomes available late in the season. The liberation of nitrogen late in the season is likely to keep up growth so late that the trees will not ripen their wood properly before the arrival of cold weather. Stable manure is a complete fertilizer, and when applied to the soil supplies, in addition to the three elements of plant food, a large amount of vegetable matter. For this reason it is well suited to the enriching of vegetable gardens and cornfields.

To be continued in next edition.



Wash-out in a Side-hill Orchard
A good cover crop will prevent such trouble

Editor Better Fruit:

The July number of "Better Fruit" came to hand during my absence, and I have just seen a copy. The edition is worthy of special notice, and you are deserving of a great deal of credit. Yours very truly, G. R. Merritt, general agent of Refrigerator Service Northern Pacific.

Editor Better Fruit:

Please continue my subscription to "Better Fruit." I have enjoyed your paper very much during the last year, and have gotten much valuable information from it, especially on the subject of spraying. Your publication may be called "Better Fruit" magazine, but it is really "BEST fruit magazine." Respectfully, Lewis J. Pierce.

BETTER FRUIT

HOOD RIVER, OREGON

OFFICIAL ORGAN OF
THE NORTHWEST FRUIT GROWERS' ASSOCIATION
A MONTHLY ILLUSTRATED MAGAZINE
PUBLISHED IN THE INTEREST OF MODERN
FRUIT GROWING AND MARKETING
ALL COMMUNICATIONS SHOULD BE ADDRESSED AND
REMITTANCES MADE PAYABLE TO

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ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27,
1906, at the Postoffice at Hood River, Oregon,
under Act of Congress of March 3, 1879.

The editor of "Better Fruit" has for years given the statistics in the actual number of carloads shipped from the Northwest, and it affords us pleasure to say that these reports have been found reliable and valuable to everybody connected with the apple industry. However, "Better Fruit," like everybody else, was fooled on the estimate last year. Men who had lived in their orchards for fifteen or twenty years estimated their crops as high as fifty per cent less than the actual yield. From our experience it seems that large crops are apt to be underestimated and light crops overestimated. The percentage estimate of crops in the state actually means nothing to anybody unless the individual knows two things—what the quantity was last year and whether the percentage is based on last year's crop or on a normal crop. It is a great source of satisfaction to learn that the East will endeavor to make up reports to show the actual number of barrels estimated for each state in future years instead of giving the percentage figures, but until it is done the whole business of estimates is simply a great big guess, and consequently buying and selling more a matter of luck, than of good judgment founded on reliable information. However, it must be admitted that such a task in the East is a large one owing to peculiar conditions. The apple producing sections are scattered all over

the East and apple growing is generally connected with general farming, and nearly every farmer has all the way from a few trees for family use up to a very large orchard. A great many small orchards together produce quite a large quantity. Now, to obtain statistics, for instance, from the New England orchards would be very difficult because these orchards are scattered all over the whole of New England, along stone walls, fence rows, in out of the way corners and pockets of hills, and the crop moved by every kind of conveyance to the different markets, but it is to be hoped that a method of planting will be evolved that will solve the problem and ascertain the actual number of barrels produced in each state every year. When one year's production is recorded, and this quantity is a fixed basis, percentage estimates will assist those connected with the fruit industry in estimating the crop of the current year.

The Value of Statistics.—The editor of "Better Fruit" has many times dwelt on this subject and again calls the attention of the fruit growers and fruit dealers to the present method in vogue of giving statistics. In fact this method is used by nearly all publications with the exception of "Better Fruit." It is the method of percentage, which practically means nothing to anybody unless he knows the actual crop produced in barrels, bushels or boxes in each one of the different states. "Better Fruit" has been using its influence in every way possible to bring about a change in giving out statistical matter. What we need, and what the fruit growers and dealers should demand, is statistics from every state showing the number of bushels, barrels or boxes produced in that state, and estimates should be made along this line. The percentage plan is misleading unless you absolutely know the quantity of apples grown in each state, and whether the percentage is a percentage of last year's crop or a percentage of what is considered a normal crop. For instance, if one state produced 100,000 barrels and was put down as 200 per cent, and another state produced 1,000,000 barrels and was put down as 50 per cent what would the reader know if he was simply given a percentage of crops of the apples in each of the two states. Where simply percentages are given without this information the reader can but guess at the final result. We hope, and believe, the authorities will realize the importance of giving figures showing the actual production each year at the end of the season, and make their estimates for the coming year in the same way.

Elsewhere in this edition will be found a photograph of Mr. J. C. Skinner, who for two years has been secretary of the Hood River Commercial Club. His work in this capacity has been highly appreciated by the community. Much of his work and many of his ideas were along original lines, and while he had charge of the pub-

licity department it seems hardly appropriate to call Mr. Skinner a booster. He has been a close student of the apple industry not only in the Northwestern sections but throughout the East as well. His work has been done along conservative lines, and he has used his best efforts to assist in the development of the orchard industry and has given special attention to distribution. In every way he has worked to assist in securing a good price for Hood River Valley fruit. His belief has been that more effective work could be done along the line of thorough distribution than by boosting. In fact his idea along this line may be best illustrated by using an expression which he frequently used, "By distributing the crop wisely, selling it intelligently and getting good prices you are creating a demand for the fruit, and if all this is done successfully in any district land selling will take care of itself where there is land to sell."

A SPLENDID CLUBBING OFFER

The price of the Weekly Oregonian is \$1.50 per year. We can furnish both the Weekly Oregonian and "Better Fruit" for one year at \$1.50, providing your order reaches "Better Fruit" office not later than October 30, 1911. The Oregonian is known to be one of the best weeklies published by any daily paper anywhere in the world.

The October edition of "Better Fruit" is a Special Statistical Edition, containing more information about the number of trees planted in each state and the size of crops grown than has ever appeared in any other publication so far as we know. These statistics were secured from reliable sources, due credit being given, and most of them are taken from government censuses. Object lessons can be drawn from each table published in this issue. We have made a short note at the bottom of the different tables to indicate a few of the conclusions that can be drawn. These are mere suggestions as to what the reader may do in order to arrive at proper conclusions in reference to the apple business.

The Statistical Bureau for the Northwest.—The editor of "Better Fruit" has for several years spent a great deal of time in writing reliable people and authorities, and visiting different districts, to ascertain what would be a conservative estimate of the apple crop in the Northwestern States, and the estimates of "Better Fruit" have been as nearly correct as is possible to give with the exception of 1910, when everybody in the Northwest underestimated. All of this takes time and money. The Northwestern people should be posted and know what the estimate is each year by the first of August. Some time ago our attention

Continued on page 53

TREADWELL SHOES

STYLISH—COMFORTABLE—LASTING

Style is necessary in a dress shoe, but style is not all—

Like the tinsel that glitters and fades away, the shoe with style *alone* "lasts quick" and makes you feel like the man who takes a chance on a horse race and loses—foolish—regretful—never again.

The *Treadwell* is not "a style alone shoe."

It's as good as the best and "then some."

Ask your dealer for a
"Treadwell"

Treadwell shoes have style—style that's built into the shoe—in, through and over the best of leather, the snappiest, most comfortable lasts—

Incorporates the best shoe-making and most careful final inspection.

Treadwell shoes are made in many styles in Box Calf, Velour Calf and Vici Kid, with single or half double soles.

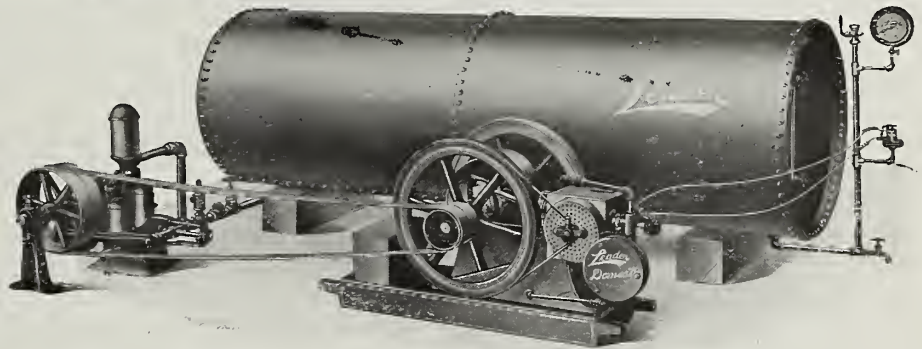
If he hasn't got it,
ask us.



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Water Supply
Troubles
Unknown to
the Owner
of a



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You can enjoy, through the ownership of a LEADER WATER SYSTEM, the same water supply conveniences which are so much appreciated by city folks. And you may have them to even a greater extent, since there are no restrictions to bother the owner of a LEADER SYSTEM. You can have your bath, your sanitary toilets, all the water you want for domestic and sprinkling purposes. A LEADER WATER SYSTEM of suitable size will supply you with all the water you want under almost any pressure you want. Leader Tanks are tested to a pressure of 125 pounds. It is the system which is sanitary, satisfactory and sure. It costs little to operate and is practically troubleless. Write for our book, "THE QUESTION OF WATER," and folder showing homes in which the Leader Water System is furnishing satisfactory water service and opinions of users. Mention "Better Fruit."

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HOOD RIVER COMMERCIAL CLUB

OF HOOD RIVER, OREGON

Respectfully requests each and every person interested in Hood River, or who may have friends interested, to request their individual grocers or fruit handlers to have on sale during the apple season the famous *Spitzenbergs*, *Yellow Newtowns*, *Ortleys* and *Jonathans* grown at Hood River. We request this because we want you to help us get the apples before a discriminating public so as to convince them of their superiority by a practical test. You are further requested to do this at once so as to insure your grocer placing his order in time to secure a supply in advance before they are all sold, so that he will have Hood River apples on hand when you want them.

Hood River Commercial Club

Continued from page 50

was called to this matter by Mr. H. S. Stechan, and we published a letter from him in "Better Fruit." We believe this matter should be given immediate attention. The growers should get busy and begin to discuss it before the different state horticultural meetings, and be able to form some plan for carrying on this work. If there is no other way to raise necessary funds it might be done by having each state horticultural society appoint one member of a committee to get together and devise ways and means of putting the idea into execution and finance the immediate necessary expense. It is our belief that every association in the Northwest would be willing to pay a sufficient sum pro rata, according to the amount of fruit handled or the acreage, that would be sufficient to maintain a man and such other expense as might be necessary to do the work.

The fiftieth anniversary of the Oregon State Fair was celebrated this year at Salem, September 11 to 16. The management is to be congratulated on the fine appearance of the grounds, the fair and indiscriminating treatment of all the exhibitors, and the clean and attractive entertainment provided. It is to be regretted that it rained or was cloudy nearly every day of the entire week, and taking this fact into consideration the attendance was very good. Although too early for the best in the line of a fruit display, the early varieties were well represented. The agricultural exhibits this year were more elaborate than ever and provided a striking demonstration of the fact that every section of our state, although widely differing in soil, topography and climate, with intelligent and up-to-date methods, is capable of enormous yields and good profits. Several counties had spent considerable time and effort in decorating with grains, grasses, etc., and the effects were pleasing. Other counties had large exhibits of canned fruits and fruits and vegetables. The camping feature of the Oregon State Fair is a distinctive one. All state fairs have a few campers, people who are either exhibitors or have concessions, but over 1,200 people camped in "Tent City" this year, and are already looking forward with pleasure to their week of camp life at the Oregon State Fair next year. "Better Fruit" received gratifying words of appreciation for the work it is doing both from subscribers and advertisers.

The new Harney Branch Experiment Station is to be superintended by M. Leroy Breightaup, who is a graduate of the Oregon Agricultural College.

Mr. David Browne of Spokane says we need more farmers on our land. They are absolutely necessary for continued good of our states. The cities can take care of themselves. Farming has been, is now and will be the backbone of the Northwest, and we want to do everything possible to promote the industry.

Seeing America First.—This feeling has been growing, and Baltimore proposes in the near future to hold a convention to promote a plan that will be effective in persuading Americans to see their own country, where the scenery is grander than any in Europe. There is not a single spot in Europe that will compare with the wonderful scenery in America. Europe has nothing like the Grand Canyon, the Yellowstone National Park, the snow-capped mountains of the Northwest, Niagara Falls, the immensity of the Columbia River or the wonderful Mississippi. In no way does the scenery of Europe begin to compare with the scenery of America. The greatest attraction of European scenery is its historical interest. There is a vast amount of wealth spent by Americans in Europe that ought to be spent in America to see their own country first. The vast sum spent by rich and well-to-do people in Paris, Switzerland and Italy is beyond our comprehension. We are glad to see this movement created, and it is our sincere hope that it will bring results and that Americans will spend money at home in future to help upbuild their own country instead of spending it in foreign countries and cities which could hardly survive without the immense revenue from American tourists.

The American Apple Exposition will be held in Denver, November 12-18 of this year, in the Auditorium Building. Bulletins are now out and ready for distribution, and can be obtained by writing the secretary, C. L. Oliver, 210 Chamber of Commerce, Denver, Colorado. Important departments of this exposition will be commercial packs, district displays, improved packages, photographic displays, home-made by-products, kitchen and factory-made apple by-products and evaporated fruit. Liberal prizes will be given and there is every reason to assume that this will be a big show with a very large attendance.

We are advised that President Taft appointed Thomas W. Wilby, a prominent automobilist and a member of the Touring Club of America, as good roads commissioner, whose duty will be to pick out and accurately locate a route from New York to San Francisco and return, which will not only include seeing all the best of the wonder spots of our grand country, but shall be safe and possible of travel without hardship at practically all times of the year.

Demonstration Trains are proving wonderful factors in the development of the Northwest. Usually they are conducted under the auspices of an experiment station. The Northern Pacific, Great Northern and the Harriman system are all doing splendid work. Seventy-four thousand farmers and professors attended the lectures at the University of California given under the auspices of the Southern Pacific.

The Harriman Lines will occupy the same amount of space at the Chicago Land Show in 1911 as in 1910. In this space will be conducted a series of lectures. Seventy-seven thousand people attended these lectures last year. After the land show last year the Southern Pacific and Union Pacific carried fifty-five thousand colonists into territory along their lines.

The total disbursements from the pension bureau of the Southern Pacific Railroad for the fiscal year ending July, 1911, was \$168,000. This sum goes to ex-employees of the railroad who have met with mishap or retired, or to those dependent upon them in case of death. This is certainly a good example to be followed by other large institutions.

Professor H. E. Van Deman, well known as one of the greatest horticulturists in America (and, by the way, "Better Fruit" has the honor of having Professor Van Deman as one of its contributing editors), will be judge at the Indianapolis Apple Show. The professor is one of the fairest, squarest and best posted judges in America.

The movement for better sanitary conditions and wholesome foods is increasing in volume and spreading rapidly. Pure foods are now being demanded, and our attention has been called to the fact that the Southern Pacific Railroad serves certified milk, guaranteed in richness and purity, and they say the baby can now travel in safety and be sure of getting pure food.

What the Panama canal means to the future of the Northwest and the Pacific Coast in general is already indicated in many ways. One of the latest announcements is that a company with a capital of \$15,000,000 is being formed in Baltimore to put on a line of steamers from the Atlantic to Pacific Coast points.

There seems to be a big demand throughout the Northwest for men who have taken a horticultural course in some agricultural college of the Northwest. The Northwestern states all have splendid agricultural colleges with the very best of horticultural departments.

List of agents for the Palmer Bucket Company of Hood River, Oregon (see advertisement on page 64). Ask any of the following dealers for a practical demonstration. They will show you how you can save the bruises: S. E. Forstrom, Joseph, Oregon; C. O. Ramsey, La Grande; Lane & Sexton, The Dalles; Grants Pass Hardware Company, Grants Pass; Churchill Hardware Company, Rosburg; Medford Hardware Company, Medford; Wallowa Mercantile Company, Wallowa; H. G. Masterson, Elgin; Wright Hardware Company, Union; R. H. Huston, Corvallis; Hulbert-Ohling Hardware Company, Albany; Craven Bros. Hardware and Implement Company, Dallas; Wade, Pearce & Co., Salem; Chambers Hardware Company, Eugene; R. M. Wade & Co., McMinnville; Wenatchee Hardware Company, Wenatchee; Yakima Hardware Company, North Yakima; Davis-Kaser Company, Walla Walla; Darbey & Mourey, Pomeroy, Washington; J. W. Stevens Hardware Company, Dayton, Washington; A. de Regt, Kennewick; Palmquist Bros., Prosser; Evans Mercantile Company, Clarksston, Washington; Valley Mercantile Company, Hamilton, Montana; A. C. Rolofson Company, San Francisco, sales agents South Pacific states.

Citrus Protective League of the State of California

By G. Harold Powell, Secretary and Manager

AS the season for the shipment of navel oranges from California is approaching it is well that the attention of growers and shippers should be called to Food Inspection Decision No. 133, issued by the United States Department of Agriculture. The decision refers to "The Coloring of Green Citrus Fruits," and reads as follows: "The attention of the Board of Food and Drug Inspection has been directed to the shipment in interstate commerce of green, immature citrus fruits, particularly oranges, which have been artificially colored by holding in a warm, moist atmosphere for a short period of time after removal from the tree. Evidence is adduced showing that such oranges do not change in sugar or acid content after removal from the tree. Evidence further shows that the same oranges remaining on the tree increase markedly in sugar content and decrease in acid content. Further, there is evidence to show that the consumption of such immature oranges, especially by children, is apt to be attended by serious disturbances of the digestive system. Under the Food and Drug Act of June 30, 1906, an article of food is adulterated 'if it be mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority is concealed.' It is the opinion of the board that oranges treated as mentioned above are colored in a manner whereby inferiority is concealed, and are, therefore, adulterated. The board recognizes the fact that certain varieties of oranges attain maturity as to size, sweetness and acidity before the color changes from green to yellow, and this decision is not intended to interfere with the marketing of such oranges."

It is the evident intention of the government to make it unlawful to ship into interstate commerce green oranges that are unfit to eat, but which are colored by sweating to give them an appearance of ripeness. In this connection the attention of our growers and shippers is called to the first section of the "Green Fruit Law," which recently became effective in the State of Florida. It reads as follows: "Section 1. That it shall be unlawful for anyone to sell, offer for sale, ship or deliver for shipment any citrus fruits which are immature or otherwise unfit for consumption, and for anyone to receive any such fruits under a contract of sale, or for the purpose of sale, or of offering for sale, or for shipment or delivery for shipment. This section shall not apply to sales or contracts for sales of citrus fruits on the trees under this section; nor shall it apply to common carriers or their agents who are not interested in such fruits, and who are merely receiving the same for transportation." From this section of the Florida law and the agitation that now prevails in that state, it is apparent that Florida is pre-

paring to take an active hand during the present season in the endeavor to prevent the shipment of immature fruit from the state. The State of Florida has also made it unlawful to place upon any citrus package or fruit wrapper any statement which contains false or misleading information regarding the name, size, quality, brand or locality in which the fruit is grown. In the case of a shipment of oranges labeled, "Pineapple Oranges," from Florida into Louisiana, the United States Department of Agriculture has recently decided that the shipment was mislabeled and, therefore, in violation of the national food and drugs act, because the oranges "were not of that grade commercially known as 'pineapple oranges,' but consisted of other and inferior grades."

A citrus fruit grower from the Transvaal has recently been in California studying the methods of handling the California citrus fruit crop, and to secure appliances to be used in the handling of the crop in the Transvaal. They are beginning to ship oranges from the Transvaal to the United Kingdom in considerable quantities during the summer months, the season when the fruit ripens in that country. The haul by rail to the South African coast, usually to Capetown, may reach a distance of one thousand miles. According to data furnished by the grower mentioned the fruit is being carried by the railroads during the present season to the point of export at the rate of 15 shillings per ton (13.1 cents per box of California size); it costs 5 shillings per ton (4.4 cents per box) for dock dues and loading charges, and 25 shillings per ton (22 cents per box) to Southampton, a distance of six thousand miles, making a total cost of transportation of 39.5 cents per box of California size for a distance that may equal seven thousand miles. The fruit is carried the entire distance without

refrigeration. With a rate of 25 to 30 cents a box from Southampton to New York, which is the usual rate on foreign citrus fruits, the South African grower, ten thousand miles distant, can land oranges in the eastern United States at a lower cost of transportation than the grower in California.

There is considerable activity in citrus fruit planting in Mexico. According to the "Daily Trade and Consular Reports," September 7, 1911, "The shipment of oranges from San Luis Potosi, Mexico, to Chicago will commence about September 20, 1911, and it is now estimated that a total of about fifty-five cars will cover the season's exports, as compared with thirty-four cars last year. These oranges all come from the Rio Verde Valley, in the south-central part of the state. The freight from Rio Verde to Chicago is \$1.25 gold per 100 pounds, and customs duty \$1 gold per 100 pounds (which totals \$1.91 per 85-pound box), but they reach the American markets so early in the season that good prices are obtained."

The exports of oranges from Spain in 1910 amounted to 1,051,764,067 pounds; from Italy, 265,498,258 pounds, an equivalent from both countries of more than 55,000 carloads of California oranges. More than 50 per cent of the Spanish oranges are shipped to the United Kingdom, and from 15 to 20 per cent go both to France and to Germany. The exports of oranges from Spain have increased 67.2 per cent in the last ten years. The freight rate on Spanish oranges to the United States is about 30 cents per box. It may be as low as one shilling (24 cents) per case, equal to two and a half California boxes, to the United Kingdom. The oranges from Italy are exported principally to Austria-Hungary, Germany, Russia and the United Kingdom in order of importance. The exports of oranges from Italy have increased 59.4 per cent in the last ten years. Exports of oranges from Jaffa in 1910 amounted to 900,000 cases, valued at \$1,136,794. Most of these oranges are shipped to the United Kingdom, with smaller quantities to Russia and Egypt. The exports from Jaffa have increased 149 per cent in the last ten years. The exports of mandarin oranges from Japan in 1909 amounted to 22,245,897 pounds. The oranges from Japan are shipped principally to Asiatic Russia, Corea, Kwantung province and British America, in order of importance. More than half a million pounds were shipped from Japan to the United States in 1909. Exports of mandarin oranges from Japan have increased 605 per cent in the last ten years.

Every orange producing country in the world is interested in the effort of importers of lemons in New York and the exporters in Sicily to have the duty removed from citrus fruits. We may expect that each of these countries, which pays a low wage to labor and a low rate of transportation will prepare to ship its citrus fruits to the United States if a low rate of duty should be established. There has been an unusual demand for lemons in

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Europe during 1911. This demand has been increasing steadily for ten years, and in 1911 it has had a marked effect on the international shipment of lemons. The California crop in 1910-11 is the largest in the history of the state. Nearly twice as much fruit has been shipped into Eastern markets as in 1909-10, and the large increase over the crop of the preceding year has reduced the price of lemons to an unusually low level. Heretofore the Eastern markets have been controlled by the importers of Italian lemons, and each year since 1885 the wholesale price has been forced at some period during the summer months to \$6 to \$12.50 per box. On account of the increase in the California crop in 1911 and the freer shipment of the fruit to Eastern markets the wholesale price of 132,738 boxes of Italian lemons in New York in August, 1911, averaged about \$2.60 per box, an average of less than ten cents per dozen. The average wholesale price of 143,986 boxes of Italian lemons in New York in August in 1910, when the California crop was much lighter, was \$3.67 per box. In an effort to hold the prices high the importers have endeavored to create a scarcity in the Eastern supply of lemons. They have been reshipping lemons to Europe since the first of August, and have withdrawn the fruit from the auction sales in New York whenever the price has been unusually low. Mr. Sciortino, a prominent New York lemon importer, is quoted as saying that some of the exporters in Sicily would probably not permit the sale of lemons in New York at a price below \$4 a box wholesale, on account of the higher prices in Germany and England, where, in referring to Germany, Mr. Sciortino states "that buyers there are willing to pay relatively higher prices than can be obtained in the American markets."

There is a duty equivalent to one cent per pound on citrus fruits in Australia; 1.84 cents maximum and a

free conventional duty on lemons, and 2.2 cents on oranges in Austria-Hungary; 79-100 of a cent on oranges and lemons in Belgium; 79-100 of a cent in Denmark; 1½ cents in Finland; 1.3 cents maximum and 44-100 of a cent minimum in France; 1.3 cents maximum on oranges and lemons, 35-100 of a cent minimum on oranges and a free conventional duty on lemons in Germany; 2.43 cents maximum and 24-100 of a cent minimum in Norway; 44-100 of a cent maximum and 44-1000 minimum in Roumania; 2.25 cents maximum and 1.42 minimum in Russia, and 1.21 cents in Sweden. There is no duty on citrus fruits in Argentine, Canada, England or Switzerland. With the exception of Australia, which produces citrus fruits, these duties are levied for revenue only. Mexico formerly granted a bounty of 85 cents per 1,000 lemons and \$1 per 1,000 on oranges exported to encourage the planting of these fruits; and Italy fixes a minimum price to be paid the producer for citrate of lemon, into which 40 per cent of the Italian lemon crop is converted, and fixes a minimum selling price as well.

THE GOODELL BERRY

The Sunnyside Nursery was generous enough to send the editor of "Better Fruit" a crate of Goodell strawberries, which is a very sweet, nice looking and delicious tasting strawberry. One of our fruit growers secured a number of plants last year and had his first crop this year, and he pronounces it one of the best berries he has ever eaten.

Events of more than passing interest to fruit growers and fruit dealers throughout the country:

American Land and Irrigation Exposition, November 3-12, Madison Square Garden, New York.

Indiana Apple Show, Indianapolis, Indiana, November 6-11.

American Apple Exposition, Denver, Colorado, November 12-18, Auditorium Building.

Oregon Apple Show, Portland, Oregon, November 15-17.

United States Land and Irrigation Exposition, Coliseum, Chicago, Illinois, November 18 to December 9.

National Apple Show, Spokane, Washington, November 23-30.

Nineteenth National Irrigation Congress, Chicago, December 5-9.

Northwest Land Products Show, St. Paul Auditorium, St. Paul, Minnesota, December 12-23.

FAIR DATES OF THE NORTHWEST
Annual meeting Oregon Wool Growers' Association, Baker, November 14-15.
Fat Stock Show, Lewiston, Idaho, December 12-14.
Land Show, St. Paul, December 12-23.

ANYBODY CAN NOW AFFORD A FARM ENGINE

The price of good farm engines has gotten so low that everybody can afford to own one. There is no longer any use of the man on a farm working himself to death. Such jobs as grinding feed, pumping water, cutting ensilage, sawing wood and other tiresome "grinds" should be turned over to an engine. It is ridiculous to think of a man wasting his valuable time and strength on such work when for less than \$38 he can own an engine which will do it. And the same engine will take a load off the shoulders of the women folk. No more hand-turning of washing machine, churn, cream separator, etc. A farm engine will do all.

If you want to get a good engine cheap the thing to do is to write the Detroit Motor Car Supply Co., 238 Canton Avenue, Detroit, Michigan, at once and have them send you their catalogue on Sandow engines. These people are specialists on engine building. They make and sell at \$37.50 an engine worth \$75 of anyone's money. This engine gives ample power for all farm needs. Has only three moving parts—has no cams, gears or valves—burns kerosene (coal oil), gasoline, alcohol, distillate or gas. They ship it anywhere on fifteen days' free trial, money back if not satisfied—five-year ironclad guaranty. The \$37.50 engine is complete—two and a half horse-power. They make larger engines proportionately cheap. Don't go through another season without a farm engine. Get a good engine like the "Sandow" and let it save you work, time, muscle and money.

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Can handle a few cars Fancy Apples
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Correspondence Solicited



Rogue River Valley Exhibit Made by Medford, Oregon, at the National Apple Show at Spokane in 1910, showing the beauty of district exhibits, of which there probably will be thirty or forty this year at the Fourth National Apple Show, Spokane, Washington, November 23 to 30

An Interesting Newsy Letter From New Mexico

By Alex. McPherson, Horticulturist, Roswell, New Mexico

AS years go by the demand for better fruit becomes more insistent than ever before. The statistics show that the production of marketable apples has decreased two-thirds in the last fifteen years. Instead of the supply from the United States and Canada being 65,000,000 or 75,000,000 barrels it has decreased to between 30,000,000 and 40,000,000 barrels in 1909-1910. These figures are indicative, first, that the people are demanding better fruit, and, second, that the area in which such fruit as the public palate demands is limited. In looking over the various apple sections of the West we find such places as Hood River, Medford, Wenatchee, Yakima; Boise, Payette and Weiser in Idaho, some small places in Utah and a few more in Colorado. Totalling all of these places their acreage would perhaps not exceed 300,000 acres of good apple lands. The southwestern portion of the United States has as yet not entered the apple industry to any great extent. In the last forty years or more orchards have been planted over a large area of New Mexico, Arizona and Texas, and in very many of these cases the quality of the products grown was not up to standard, nor did the trees show good health and satisfactory growth. But in some portion of the Pecos Valley, in Southeast New Mexico, notably Roswell, the apple industry has been amply demonstrated, so that we know we have an area that will produce apples equal to the best apple growing sections of America.

The writer has examined the majority of the apple growing sections in the West and finds that the Pecos Valley, in the vicinity of Roswell, has all of the natural conditions to warrant extensive planting of the king of all fruits—the apple. In fact orchards here have produced phenomenal crops, and the trees are healthy and vigorous. Many of the varieties that are grown here are equal, if not superior, in quality to the same varieties grown in the Northwestern states. Perhaps at the present time this particular section of New Mexico has greater possibilities for development in horticulture than any other section of the great West. First, because of its climate, soil and water supply. Second, because of its proximity to a splendid and ever expanding market. Good apples cannot be grown in the larger portions of Texas, Arizona, New Mexico, Southern California and the Gulf states. Roswell is about the southern limit in which first class apples can be grown. Therefore, their market is at their door. The apples for these sections have been supplied by Colorado, Utah and the Northwestern states. The freight rates are excessive, but here in this section the apple grower can reach these markets at about one-third of the cost in freight on apples from the great apple growing sections of the Northwest. This in itself guarantees a good profit to the grower.

The varieties of apples that seem to be par excellence here are: Jonathan, the Black Twig, York Imperial, both the Stayman and common Winesap. Of course, Ben Davis, Gano and Black Ben Davis are grown, but the Black Ben Davis seems to outrank the other varieties of the Ben Davis family. Some other newer apples are grown here very successfully and are being planted very extensively, such as King David, Senator, etc. The Delicious grows here almost to perfection, besides a number of other varieties, such as Arkansas Black and apples of that quality, and make a splendid showing. Such apples as Yellow Newtown and Spitzenberg do not seem to be productive in this section. Peaches of very fine quality are grown and are very prolific, as well as other members of the peach family. Very few prunes are grown, but grapes of the foreign varieties are giving splendid results. Pecans and almonds are grown with some success. All of the small fruits grow and yield very prolifically. This section of the country demands different methods of handling fruits than the Northwest. The days are quite warm in the fall and winter, hence fruit as soon as gathered from the trees must be taken to cool sheds or cold storage. This may seem a handicap at first, but it is really a good thing. In the Northwest there are several months in the winter when it is dangerous to ship apples to Eastern markets on account of zero temperature, and to avoid this they must be shipped in the fall and placed in cold storage in the East. Here it is different. Large cold storage plants have been built, and the apples are removed to the cooling house and shipped at once, or placed in the cold storage plant and taken out and shipped as the market demands at any time of the year, which gives the fruit growers who are organized into the Roswell Apple Association, or stock company,

an opportunity to get the highest price possible for their goods with the shortest haul possible of any apple growing section in the United States.

There are very few pests so far in this vicinity. On account of the warm days during the winter the codling moth seems to change from the worm to the moth, and in my examination of orchards that I knew had considerable codling moth last year I could scarcely find a living larva this spring at the time that we usually expect them—when the trees begin to bud—but found them coming out all winter long, and no doubt they perished, as there was nothing for them to feed upon. This accounts, in part at least, for the intermittent attacks of the codling moth in this section of the country, and at no time have they done a very serious damage as compared to the Northwest. The only scale that can be found here is the Putnam scale (*aspidiotus anelyus*), sometimes mistaken for the San Jose scale, but it is not nearly so dangerous, as it is not so prolific. This scale is commonly called the cottonwood scale, as it is a native of the United States and is found on the cottonwood trees wherever they grow, but it has never done very much damage to orchards. Here, however, it seems to be more prolific than any other place that I have known, and spraying will have to be done sooner or later to exterminate them, which can easily be done. Up to the present time this section has escaped the pear blight.

Now, with regard to apple growing in the other portions of New Mexico, apples are grown in the Rio Grande Valley with varying success. The northwestern counties in the San Juan country seem to be fairly good for the production of apples, although the country is not developed as yet, but may be in the near future. New Mexico is a very large territory and her resources are almost wholly undeveloped, and to my mind there are greater opportunities for profit along horticultural and agricultural lines than in any other portion of the United States.

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That is what you want, because our stock of fruit and ornamental trees is exceptionally fine. Our fruit trees were propagated from buds taken from bearing orchards; they are vigorous, healthy, and above all true to name; that stocky body, grown on whole roots, makes them an ideal tree to plant.

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We can satisfy you both as to **QUALITY** and **PRICE**. Our trees have the highest possible developed **ROOT SYSTEM** and are **TRUE TO NAME**.

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Horticultural News Notes From Southern Utah

By Leon D. Batchelor, Horticulturist

RECENTLY it was the pleasure of the writer to visit the Southern part of Utah, commonly known as "Dixie." This country lies in the extreme southwestern corner of the state, in and around St. George, Washington County. The best fruit sections in this country are a great distance from the railroad—otherwise they would be much better known in the fruit world—in fact it was necessary to take a sixty or seventy-mile stage ride from the railroad to reach this "Dixie" country. The altitude here is about 2,000 feet above the sea, and after passing over a mountain range of about 7,000 feet it was like stepping from winter into summer. At this time, April 28, the roses were in full bloom, peaches were as large as olives and almonds had developed to the size of a small pullet's egg.

The climate is ideal for the production of European grapes, plums, cherries, almonds, apricots, peaches, figs and pears. Pear blight is unknown in this section of the state. In fact the writer observed a pear tree along the river bottom in one of the old towns of the county which must have been between fifty and sixty feet high. This

may sound pretty high to some of the fruit growers in the newer sections of the country, and my only regret is that I have no photograph of this tree to verify my statements. The English walnut crop was not damaged by the frost in the least, neither were the other fruits mentioned above. The first crop of alfalfa was being cut at this time, which gives one an idea of the advancement of the season. There are thousands of acres of bench land throughout this country which are admirably adapted for the production of high class fruit. The extensive mountain ranges furnish ample water supply and ideal reservoir sites for the future development of this virgin soil. The soil itself is a rich, sandy loam, which, in many cases, produces the native sage brush to the height of a horse's back. With the development of a railroad through this country there is every reason to believe that this vast area may be opened up and developed into a fruit section which will be second to none in the world. At the present time, however, the main market for the fruit is in the small towns close by, mining camps, etc.

Prune Survey of State by the Agricultural College

A COMPLETE survey of the state in relation to the prune industry is to be undertaken at once by the Oregon Agricultural College. Beginning in the southwest the staff of experts assigned to the work will work north, visiting all the prune centers and studying methods of growing, evaporating, handling and shipping the crop. In this connection the diseases and pests attacking prunes will be given much attention. Frank R. Brown of Camas, Washington, who graduated from the horticulture department of the Oregon Agricultural College last year, and who has since been foreman of the college experimental orchard, will go out on this survey work, and will be joined later by Mr. Frederick G. Bradford, a Harvard graduate who has been called from the University of Maine, where he has just completed three years of special graduate study. The orchard survey will begin in Douglas County, and will work north from there. It will not be attempted to visit every prune orchard in the state, but the experts will go to practically all of the prune centers and make complete surveys. The first circuit will include such points as Roseburg, Riddles, Myrtle Creek, Crane, Yoncalla, Creswell and Eugene. The second will cover the vicinity of Salem, taking in the famous Liberty-Rosedale district, Dallas, Sheridan, North Yamhill, Lafayette, Newberg and the Waldo Hills country. In Eastern Oregon a third circuit will cover Mosier, The Dalles, Freewater-Milton and the Grand Ronde Valley.

After the field survey as to methods of growing prunes has been completed the study of evaporation systems will be taken up, with investigation of the comparative merits of various types of dryers, of fuel efficiency, of the type of fruit they turn out and the general economy of handling the crop. In connection with these investigations the college will interest itself especially in a study of what is known as "prune drip," which is causing enormous losses to growers. This sort of "sugaring" sometimes causes a loss of fifty per cent. The experts are hoping to throw some light on the cause of drip to discover whether it is a matter of evaporation or from faulty methods of curing and handling the fruit. A thorough investigation and inspection of the methods of processing will be made, and the results will be published in bulletins to be issued by the college in a regular "prune survey series." As a result of this survey the college hopes to be able to take up next year the study of some particular problems and experiments in prune growing, for which a thorough knowledge of the field and the processes in present use there is necessary.

"Prunes are now selling for the highest price that they have commanded for years and years," said Professor C. I. Lewis, head of the horticulture department, discussing the coming surveys. "The field men, in connection with their surveys, will make other observations, especially as to various phases of winter killing spots and the adaptation of varieties to

KEROSENE ENGINES REPLACING GASOLINE

Our many readers who are about to buy farm engines will be pleased to know that the high price of gasoline is nothing to become alarmed about. As a matter of fact gasoline is not, and never was, as good an engine fuel as common kerosene (coal oil). Two pints of kerosene, under actual test, give more engine power than three pints of gasoline. So why worry about the price of gasoline so long as kerosene remains so cheap? Kerosene, besides being cheaper and more powerful, pint for pint, than gasoline, is much safer. It never explodes, nor does it waste by evaporation. Kerosene is more convenient to buy, too. You can get it at any store cheap, while gasoline is always high, and not every storekeeper handles it.

A great many of our readers are taking advantage of the Detroit Engine Works' offer to ship a kerosene engine on fifteen days' free test to prove that kerosene beats gasoline in every way. We suggest to all our readers that they, before buying a farm engine of any description, look into the kerosene engine. A man with the "Amazing Detroit" not only has an engine especially equipped for kerosene, but when necessity arises he can use benzine, distillate, alcohol or gasoline. This engine sells at a very low price, so anybody can easily afford one. It comes ready to run and is a perfect engine for pumping, sawing, threshing, churning, separating milk, grinding feed, etc. A postal mailed today to the Detroit Engine Works, 507 Bellevue Avenue, Detroit, Michigan, brings catalogue, prices and full explanation of fifteen days' free trial offer.

INDIANA'S EARLY ORCHARDS.—The first orchards planted in the Middle West were started by Johnny Applesseed, or John Chapman, who obtained his seed from the cider mills of Western Pennsylvania and scattered them along the streams and through the woods of the Indiana wilderness. From his day to this it has been evident to members of the Indiana State Horticultural Society that Indiana has both soil and climate for fruit culture, and what is needed now is to revive the spirit and determination of the pioneers who brought the first orchards into bearing. This revival is expected to come through the apple show held in Indianapolis, Indiana, opening November 6.

Editor Better Fruit:

We are in receipt of your letter of September 21, and thank you for the courtesy of putting us on your complimentary list. We have used your magazine constantly, not in checking up the advertisement, but for reference with our patrons. We think it the best publication of its kind we have ever seen, and are looking forward to a big season next year through the help of its advertisement. Very truly yours, Crest Chemical Co., Seattle, Washington.

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Orchard Lands, Irrigated
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We need settlers—not their money. Irrigated orchard tracts in the famous Rogue River Valley, Southern Oregon; prairie land, ready for the plow; no timber, no rocks. Water now on the ground. Unequaled for productiveness and climate. This proposition, and financial standing of company, indorsed by national banks, leading business men and financial agencies. Only irrigation company in the Northwest permitting settlers to make the land pay for itself. We also sell improved orchard tracts on small monthly, semi-annual and annual payments to those who are unable to make residence at the present time. Send for illustrated descriptive matter. ROGUELANDS INCORPORATED, 1018 Chamber of Commerce Building, Portland, Oregon, or Medford, Oregon.

WANTED—Good Housekeeping Magazine requires the services of a representative in the Northwest to look after subscription renewals and to extend circulation by special methods which have proved unusually successful. Salary and commission. Previous experience desirable, but not essential. Whole time or spare time. Address, with references, J. F. Fairbanks, Good Housekeeping Magazine, 381 Fourth Avenue, New York City.

WHOLE ROOT TREES

Are the only kind to set. Now is the time to make arrangements for your next fall's requirements. We have a large, full line, and ask that you correspond with us.

CARLTON NURSERY CO.
CARLTON, OREGON

localities for all kinds of fruits, including apples, pears and cherries. This work will be carried on in conjunction with the department of plant pathology, and an attempt will be made to discover whether difficulties are due to climatic conditions alone or to faulty methods of handling the orchards and crops, or to diseases and pests. The work will eventually take in nearly all the fruit regions of Oregon."

The blanks printed for the use of the survey will afford a mine of exact information on fruit growing in the state when they have been filled out. They will contain the location as to elevation, county and township; the name of the owner and his postoffice address; the site and plan of planting; the general aspect, distance between trees, kind and variety of fruit; the age of bearing, amount of blossoms and of fruit set at time of inspection. It will show what kind of stock was used, the height of the head and the maturity of the crop; the kind of soil and its value per acre; the irrigation methods that are employed, the number of times it is watered and the age of the trees. The cultivation, pruning, cost per acre and number of acres will be recorded. Any fungous diseases or insect pests attacking the fruit will be noted; the kind of sprays used and time of application, with their cost; the cover crops and fertilizers employed; the past and present condition of the trees, drainage, amount of thinning undertaken, size of the fruit and cost of the work. The manner of picking and the price paid for that part of the orchard labor will be listed, as well as the number of pounds produced to the acre, that the cost of production per pound may be determined. The selling price per pound from that orchard in each of the past six years, the method of disposing of the crop, the owner of the dryer and the amount of frost injury, all will be a matter of permanent record at the college when the survey is completed.

Editor Better Fruit:

Your July number is too big and complete to mention anyway but briefly. You have put before the fruit growers in a very complete way the other side of fruit marketing. It will help enormously to a better understanding. I hope, too, that your August number will get into the dealers' hands in a very general way. They, too, have an incomplete point of view; perhaps not so much one sided, though, as that of the average fruit grower. You have my sincere congratulations on the idea and its development. "Better Fruit" has taken a very high place in the study of the problem of marketing our apples. With kindest regards, R. M. Winslow, Victoria, B. C.

Perfection Truck Company of North Yakima, Washington, are putting on the market a new truck for handling fruit, which is the latest and probably the best truck on the market. You have seen the old swing trucks used in many localities, which for many years seemed to fill the bill, but in using them the truckman had to handle every package from the truck to place it in the pile. In this way five boxes were handled by one man at one time, and it occurs to us that it will be a great labor saving, and consequently a matter of economy for all associations and packing houses, in fact for everybody handling fruit in packages where it has to be moved from one place to another. Further particulars about this truck may be obtained by addressing The Perfection Truck Co., North Yakima, Washington, whose ad appears elsewhere in this paper.

APPLES PEACHES PEARS STRAWBERRIES

In Car Lots

THE HUMPHREYS COMMISSION CO.

JOHN M. WALKER, President

Wholesale Fruits and Produce

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Denver is a Good Market

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We offer to you in any quantity and at lowest market price our new crop of "Diamond Quality" Selected, Re-cleaned Farm and Field Seeds including Special Mixtures for Special Purposes.

Cover Crops for Orchards

Dry Land Pasture Mixture—Wet Land Pasture Mixture—Special Mixture for Burned-Over Land.

Write to-day for Samples—Compare them—Note their purity and weight—Or, send in your order at once. We guarantee prompt and careful attention and full value for the money.

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Portland, Oregon



SPRING VETCH (Vicia Sativa) for sections West of the Cascade Mountains.
WINTER VETCH (Vicia Villasa) for sections East of the Cascade Mountains.

Don't Buy Trees Until You See Us

We are giving the biggest values for the least money on any nursery stock you can get. Quality unequalled at unparalleled low prices. Place your order now for prompt fall shipment.

Address 67 E. 76th St. North, Portland, Ore. BENEDICT NURSERY CO.

Hood River Valley Nursery Company

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HOOD RIVER, OREGON

Phone 325X

Will have for spring delivery a choice lot of one-year-old budded apple trees on three-year-old roots, the very best yearlings possible to grow. Standard varieties from best selected Hood River bearing trees—Spitzenbergs, Yellow Newtowns, Ortleys, Arkansas Blacks, Gravensteins, Baldwins and Jonathans. All trees guaranteed first-class and true to name. Start your orchards right with budded trees from our nursery, four miles southwest from Hood River Station.

WILLIAM ENSCHEDE, Nurseryman

H. S. BUTTERFIELD, President

Authentic Information

REGARDING HOOD RIVER VALLEY

We will be glad to furnish you with full details of our valley and give you a list of what we have for sale in improved and unimproved land. At the present time we have some desirable buys. Will send you literature on request.

Reference: Any bank or business house in Hood River.

Guy Y. Edwards & Co., Agents

HOOD RIVER, OREGON

Boston's Superiority As A Point for Exporting

By T. S. Herbert Taylor

PURSUANT to a recent conversation I may say at once that it gives me a great deal of pleasure to take advantage of the kindly offer of your valued columns to briefly outline the superiority of Boston as a port for the exportation of apples, so that readers of "Better Fruit" may perhaps be brought to appreciate the advantages this port undoubtedly possesses. At the same time I regret that the question is not being dealt with by an abler pen than mine. Before reaching the subject I may be pardoned if I strike the personal note a moment, since I do so at the outset to show that I treat the matter with authority and speak with actual knowledge. Until recently, until I became associated with Messrs. J. & H. Goodwin, fruit brokers of Manchester, Liverpool and Hull, England, I was for many years with the Leyland White Star Lines—the steamship combine—during which time I was located at various ports in Canada and along the Atlantic seaboard. In later years I devoted the greater part of my time to developing the apple traffic. So much, and perhaps too much, about myself, but it will be seen that I am thoroughly conversant with conditions, and the methods of handling and shipping this perishable commodity at all ports, both in this country and in Europe. Now, I can say to you that no port can equal Boston for facilities. Certainly at no other port is the fruit handled to such good advantage.

First, and perhaps most important, there is the question of handling—a matter of vital interest. At Boston there is absolutely no lighterage. All teaming is also eliminated. The cars as shipped are run into a covered shed on the pier, at which the receiving steamer is loading. In other words, the cars go direct from the shipping point to alongside steamer without breaking hulk and without leaving the railway irons. The floor of the dock shed is on a level with the bottom of the car; thus the boxes are wheeled direct from the car on trucks and have simply to be moved some forty or fifty feet to the ship's hatchway. Not only does this assure a minimum of handling, but the fruit is always kept under cover and is protected from the weather, as it should always be in the fall and winter seasons, during which it is shipped. It would be a revelation to your shippers who are acquainted with conditions at other ports, New York, say, to visit the new fireproof docks at East Boston, the terminals of the Boston & Albany Railroad (New York Central lines), and see their boxed apples being taken direct from cars on trucks, as described, and then placed at the foot of the gangways to the steamer in wooden trays, or large boxes, instead of the customary rope slings. This method of taking the boxes from the dock to the ship's hold alone avoids considerable damage, which inevitably results when boxes

are slung together. It would also be interesting for your friends to view the other large terminals of the Boston & Maine Railroad, operating with the Erie Despatch and other through connections, where at any time during the season our friends in the trade would see large quantities of apples being handled as they should be. The importance of this whole question of reducing the physical handling of the fruit to a minimum is too obvious to dwell upon further. A word here as to modus operandi where apples are held at seaboard in Boston refrigerator storage. Here also the cars can be taken under cover at the storage warehouse, and the boxes placed directly from the cars into the refrigerator compartment. I noticed in one of your late issues a cut showing a car being unloaded into the warehouse of the Boston Terminal Refrigerating Company, well illustrating the above. When these stored apples are reshipped the boxes are again loaded directly into a car, which is then switched to the docks. The plant of the cold storage warehouse mentioned is located but a stone's throw from the East Boston docks, and from this and other stores cars can be loaded and placed alongside ship at the Boston & Maine terminal or any other berth in the harbor in the course of any day upon the shortest notice.

Now, as to shipping facilities. There are three lines maintaining services to Liverpool from Boston, one of which alone—the Leyland line—dispatches during the fall and winter apple season regularly a steamer every week, sailing on Saturdays. On all of these steamers, and those of the Cunard line, refrigerating space is readily obtained. There will be weekly sailings of steamers to London, with refrigeration available, during this coming season. Every ten days it is intended to have a sailing for Manchester, these steamers also being provided with refrigeration. There are also frequent sailings for Glasgow and other ports. Nowhere do railway and steamship officials co-operate as they do in Boston in the general interests to insure prompt clearances of perishable property, hence delays

are unknown. To emphasize the importance of this let us suppose a case where a car of apples has missed a Liverpool steamer, or say Manchester or London, on account of steamer just sailing, there is always another steamer on the berth with refrigerators ready, and no transfer by teams or lighterage is necessary. The car is merely replaced by a short switching around to another dock should the following steamer not sail from the same pier. It should be noted here that no expense is incurred at Boston beyond the flat railroad rate, no transfer charges of any kind, no shipping brokerage or forwarding fee. This is also true of apples stored in Boston in transit, which are afterward exported, in which case shipper only pays actual railroad freight—that is, the through rate from point of shipment to steamer plus net storage charges.

As the advantages of the port are becoming better known from season to season, Boston is obtaining a greater share of the apple shipments. For instance, last season many thousands of barrels were shipped from Virginia past Baltimore, Philadelphia and New York for exportation from Boston. This fact speaks for itself, and can be accounted for in no other way than that the exporters have come to appreciate the importance of better handling and the facilities affording better service throughout. For the reasons given above, and were it not for the fact that I am reluctant to tax your patience and space to greater length, I could cite many more; many exporters have decided to operate from Boston because of the more favorable working conditions there. Our firm, Messrs. J. & H. Goodwin, after operating in Canada and in the United States for years, exporting heavily from the various ports, has centralized its export business at Boston, and we clear everything possible from that port. We find that we can control shipments better and have greater opportunities to exercise proper supervision over consignments. In conclusion, I repeat that if our exporting friends will but look into the situation they will, in their own interests and that of the fruit, use Boston more freely when making direct export shipments.

APPLES

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APPLES

"See America First" Convention Held May, 1912

THE "See America First" convention to be held in Baltimore during May, 1912, is already being much talked about through the press and by the people generally. The plant of the committee in charge, appointed by Mayor Preston, and of which Mr. Henry F. Baker is chairman, is to make the display one of the greatest ever seen. Through this Baltimore movement "See America First" is becoming a by-word everywhere. Mary, as she starts off on a fifty-mile automobile trip, calls back: "Good-bye, mamma; I am going to 'See America First.'" It is "See America First" with everybody at all hotels and the slogan is becoming general. President Taft, United States senators, governors and other prominent people have already commended the movement, and the governors of many of the states have appointed committees to arrange for the exhibit of their respective states. The display will be largely pictorial and topographical, and both the Baltimore committee, which will have entire charge of the arrangements for the convention, and the Maryland committee, which will arrange for the state exhibit, are expected to get very busy in the near future now that the vacation period is over.

Listen to what one of the most talked about United States senators, Hon. Luke Lee of Tennessee, has to say about the movement in a letter to the Greater Baltimore committee: "It gives me great pleasure to indorse most cordially the object and purposes of the 'See America First' convention. I feel sure that Tennessee will be much interested in your movement when understood here, and I will be glad to do all I can to bring the convention before the people of Tennessee, so that it will be understood." "I enclose you a list of delegates I will appoint to represent Virginia at the convention," wrote Governor Mann of Virginia, "and will be glad for the committee to write each of them such particulars in reference to the matter as it may deem proper." "I should be very glad, indeed, to be present, but my term ends in December of this year, and I have no doubt that my successor would be more in

evidence, and better in evidence than I would at that time," said Governor Willson of Kentucky. From the private secretary of Governor Glasscock of West Virginia comes this message: "I beg to say that we are holding Governor Crothers' letter in regard to this convention, and will appoint delegates at some time in the near future. The governor is not able at this time to say whether he will be able to attend the convention or not." Governor O'Neal of Alabama says: "I will take up the matter of appointment of delegates as soon as I possibly can, and will take pleasure in attending the convention myself if official duties will permit." Governor John Burke of North Dakota says: "I shall be very glad to appoint delegates to this convention, for I am heartily in sympathy with its object." Governor Jarred T. Sanders of Louisiana says: "Later on I will appoint delegates to the 'See America First' convention. Best wishes for the success of the movement." Governor Lee Cruce of Oklahoma must be quite familiar with newspaper work. This is the way he writes Mandel Soner, press representative of the Greater Baltimore committee: "I shall give the newspaper dope to the press boys here, as per your request. I cannot tell at this time whether I shall be able to be with you in May, 1912, or not. It is impossible to foretell what an hour may bring forth." Governor Frear of Hawaii has sent this message to Governor Crothers in reply to his letter asking co-operation in the "See America First" movement: "I took the matter up at once with several organi-

zations in this city which would naturally be interested in the movement, with which movement, I hardly need to add, I am in entire sympathy. Nothing definite has as yet been done." Harken to the words of a great newspaper man, Mr. Harry Chandler, treasurer and assistant general manager of The Times, Los Angeles, California: "The 'See America First' convention deserves the support of the entire country, for there are many people who spend their good money abroad seeing sights which in no way compare with the beauties of our own land. It is doubtful whether or not I shall have the pleasure of being in Baltimore during this convention, but assure you that if I am in the East at the time will be glad to visit Baltimore. You are correct when you say that 'Los Angeles must be one of the garden spots of the world.' It is, indeed, God's country, and is the most rapidly growing city in the world." To the Greater Baltimore committee he says: "We had, of course, learned of the municipal and state development campaign which is under way to bring Baltimore and Maryland to the front, and think it is a very worthy undertaking and wish you success." H. M. Woir, editor of the Municipal Development Magazine, Bloomington, Illinois, says: "I think that the movement is of vast importance, and personally have advocated many times to friends and acquaintances the great opportunity of interesting travel that this country affords. I have had the good fortune to have traveled in practically every country of the civilized globe, but at the same time never lost sight of the fact that in seeing the entire part of the United States I was educating myself along lines that other countries did not offer." After seeing these strong commendations of the movement by such prominent men, Mr. Edwin L. Quarles, director of the Greater Baltimore committee, said: "The world has always placed a premium upon men with constructive minds. Solomon's greatest work was building a temple. Our work now is to make the 'See America First' convention the greatest thing that ever happened."—Contributed.



NEW PLANT PATHOLOGIST

The Oregon Agricultural College has just recently added to its staff of plant pathology experts Mr. F. D. Bailey, a graduate of the botany department at the University of Wisconsin, whose specialty is plant diseases. Mr. Bailey takes his degree of master of science at Wisconsin this summer. His study of "A Fusarium Disease of Cabbage," upon which he wrote an able thesis, is considered an especially meritorious piece of work, and he is thought to be a distinct addition to the strength of the department.

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Hose, Nozzles, First-class Plumbing Supplies

C. F. SUMNER

Successor to Norton & Smith

HOOD RIVER, OREGON

YOUNG BEARING ORCHARD

Do you want a comfortable orchard, bearing the best varieties, with a good crop in 1912? Six and one-half acres of Yellow Newtowns and Arkansas Blacks, handsomely situated on the White Salmon River, in a good community with all advantages, for sale by the owner. PAUL MEKERCHER, White Salmon, Washington.

Constable & Morgan BROKERS

Los Angeles, California

WE HAVE THE
C-A-S-H
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Storage-in-Transit and the Box Apple Industry

THE apple season of 1910 and 1911 will always be remembered as being remarkable for the extremely high prices paid for barreled apples, which have been the highest in the history of the apple industry, and the extremely low prices for box apples, which have been the lowest in the history of the apple industry. The demand at all times has been dull and dragging on boxes and strong and active on barrels. This in spite of the fact that the quality of box apples has always been superior to barreled apples. What is the reason of this paradox? Can it be possible that the more scientific and careful the growing and packing of apples become the less they are appreciated? Has the expert packing of apples, which has reached its highest development in the apple producing sections of the Pacific slope only had the result of making the public prefer the rough-and-ready, slap-dash packing of barreled apples, especially when it is known that the great majority of these barreled apples contain, with the exception of those on the face or top of the barrel—apples suitable only for cooking? No, there is a sensible reason for the fact that box apples have not been wanted and have ruled at low prices. The reason lies in the method of distribution of the two classes of apples. The barrels have been shipped to every market in the country, large and small. There has been a strong demand for them in England and Germany. Western New York fruit houses have had a steady demand and drain on them from the West and South, and from the East and from the lands across the sea. There was about an equal quantity of apples packed in barrels and boxes; the barrels are being consumed in a thousand places, the box crop practically was marketed in two places—Chicago and New York. Of course, there was some small amount of boxes shipped abroad, especially Newtowns, and some few cities like Philadelphia and Boston had a small amount of boxes, but the markets of New York and Chicago were at all times oversupplied. The newspapers were filled with flashing advertisements on the part of a few dealers stating the hundreds of thousands of boxes that their firm would have the distinction of handling. One Chicago house blazoned forth to the world that they had disposed of a thousand cars. The impression was given that the quantity was so unlimited on the part of every large dealer in Chicago and New York that every smaller dealer shut out the temptation of investing in them.

This absolute lack of intelligent distribution came about through the rigid rules of the railroads regarding freight rates on box apples. One dollar per hundred is the rate on a carload of box apples, whether shipped to Denver, Chicago or New York, and when stored at one point or the other it cannot be reshipped without paying another freight rate. If a storage in transit

privilege should be allowed on shipments of box apples there would at once develop a system of distribution which would scatter the crop of box apples all over the country; it would place them in consumption where they were most wanted. The crop of box apples, amounting to twenty million boxes, is transported in a month and a half, but it requires nine months to consume it, even though it should be scattered in every city, large and small. By the storage in transit privilege is meant the privilege to ship the car to any warehouse that is desired and later on when the owner desires to market that car of apples to ship it to its ultimate destination and pay for the total services, the through rate from the initial point of shipment to the ultimate destination, and a switching charge in addition, because that is the only extra service in addition to the through haul that the railroad has rendered in granting this privilege. It is impossible for the owner of a considerable amount of box apples, whether he is a grower or an association of growers, or a merchant who has invested his money in their output, to tell what market during the coming nine months after the crop is gathered will be a desirable market for his apples. He can tell less because it is a new industry and only cities of the

larger size have developed the use of box apples.

With the very great increase in the production of the orchards of the Far West, amounting last year to twenty million boxes, it is essential for the prosperity of the growers in the Far West, or any person who desires any part in that industry, whether railroads or warehousemen or merchants, to do a lot of missionary work in scattering the crop and introducing it to the cities of smaller size and the European markets. A lot of this missionary work has already been done, and the crop would flow to cities of the second class as well as the first class if the railroads would see to it that a flexible method of distribution was permitted by granting the storage-in-transit privilege. The greatest benefit would go to the railroads between Chicago and New York. In that district lies half the wealth of the country, and half the crop of box apples should be there distributed. With the exception of one railroad, the Erie, the other transcontinental lines from Chicago to the East have next to nothing of this traffic. The storage-in-transit privilege would give to them a very large share of this traffic. It is of the utmost importance, therefore, that all growers' associations and all apple dealers should bring this information to the attention of the head officials of railroads—it will help them more than it will help the general industry. In addition, it is a matter of importance to all persons interested in the apple industry, whether in barrels or boxes, because if the box industry is placed upon a healthy and profitable basis the capital available for investment in apples will flow toward that part of the industry and leave the barreled apples open to a natural competition, but not to the excessive competition that now exists.—Contributed.



MR. J. C. SKINNER

who for two years has been secretary and manager of the Hood River Commercial Club, has just tendered his resignation. Mr. Skinner, in this line of work, has made a reputation for himself that has extended all over the United States. The people of Hood River appreciate his work, which is not only valuable but in reality wonderful. He is giving up this line of work to go into commercial business.

[Editor's Note—We desire to call the attention of our readers to the statistics in this issue, most of which were collected by Mr. Skinner, authority being given in each instance to the source. These statistics will be of inestimable value to apple growers throughout the country, and while these statistics apparently cover but a few pages the time required to get all together has covered a period of three months.]

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of

**Apples, Pears
Peaches, Prunes**

Now distributing for the largest deciduous shippers of Northern California, also agent for Chase & Co., packers, Florida.

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ST. LOUIS, MISSOURI

**ORCHARDIST
SUPPLY HOUSE**

**FRANZ
HARDWARE CO.**

Hood River, Oregon

Oregon Apple Show and Horticultural Society

By F. W. Power, Secretary

THE management of the Oregon State Horticultural Society has set November 15 to 17, inclusive, for its twenty-sixth annual meeting in Portland, Oregon. The program will be unusually strong, and will consist of live, practical topics, handled by men whose experience entitles their opinions to respect. In order that the program may be made as nearly as possible responsive to the needs of every grower, members are invited to mail the secretary any question they would like brought before the meeting for answer or discussion.

The fruit show, which in recent years has become such a prominent feature at the annual meetings, will it is believed surpass all previous shows put up by the society. It is proposed this year to make a special effort to give dried fruits, and especially the dried prune, the prominence to which its importance entitles it. This is as it should be because the financial returns from evaporated prunes in Oregon equals those derived from the apple. The management is especially desirous of emphasizing the importance of the proper curing of prunes, as on the proper curing the stability of the industry largely depends. To this end they will offer exceedingly attractive premiums for the best cured evaporated prunes, and they ask that all growers

contribute at least five pounds to this contest. This will be a special contest, passed upon by prune experts, and should prove of great educational value to those interested in evaporated prunes. Another educational feature of the show will be a contest in the naming of varieties of fruits. The society will provide premiums in this contest, which will be open to students of the Oregon Agricultural College making the best record in the contest. This contest will be under the direction of the horticultural department of the Oregon Agricultural College. Growers are requested to contribute typical specimens of each variety they grow to afford material for this contest. Members, by watching this contest, can also test their own ability in naming varieties.

It has been decided to throw open the competition in all classes of exhibits (not otherwise specially limited to some district) to growers from other states. It is expected and hoped that our neighbors of Southern Washington especially will respond to this opportunity. The management this year, in place of trying to secure carloads, is offering about the same amount on smaller exhibits of one hundred or fifty-box lots, thinking that more can be induced to compete for such prizes. All premiums this year will well repay anyone taking a prize for bringing their fruit. The Oregon State Horticultural Society, in the twenty-six years of its existence, has performed a valuable work for Oregon horticulture. Its annual meetings and fruit shows should receive the hearty support of all fruit growers of Oregon.

COME TO VIRGINIA

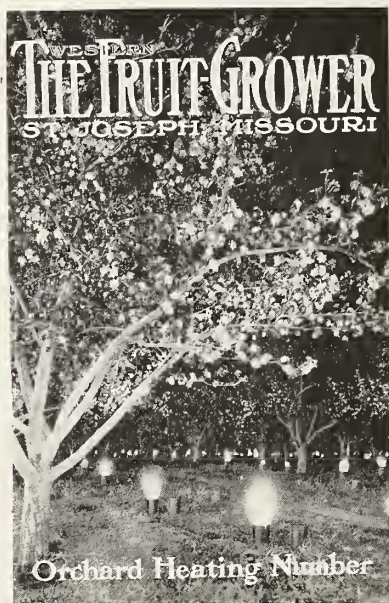
Homes for all, health for all, happiness and independence for all. Ideal climate; no malaria, no mosquitoes. Write for our land bulletin, which will interest you.

J. R. Meadows, Appomattox, Virginia

CLUB ANNOUNCEMENT



"Better Fruit" per year... \$1.00
The Fruit Grower... 1.00 - total, \$2.00



Will send them Both \$1.50
for, per year



TRAPPERS GET READY BIG MONEY IN FURS

Over ten million dollars will be paid to trappers of fur bearing animals during the coming winter. Any man or boy living in the country can add a goodly sum to his earnings by trapping during spare moments. We furnish ABSOLUTELY FREE a complete Trapper's Guide which tells you the size of trap and kind of bait to use for the different animals, how to remove the skins and prepare them for market. We also furnish the best traps and baits at lowest prices. We receive more furs direct from trapping grounds than any other house in the world, therefore can pay the highest prices for them. Our price lists, shipping tags, etc., are also FREE for the asking. If you are a trapper or want to become one, write to us today. We will help you.

F. C. TAYLOR & CO.

GREATEST FUR HOUSE IN THE WORLD
916 Fur Exchange Building, St. Louis, Mo.

Are You Interested

in guaranteed, high-grade nursery stock? Does it make any difference to you what quality of stock you plant? We know it does, and for that reason we feel certain that you will consider the Toppenish Nursery Company before placing your order.

Our trees are guaranteed, and they have no equal.

Let us figure with you on your this season's needs. We have this year, due to exceptionally favorable growing conditions, the finest lot of stock you ever saw, the kind of stock that grows from the day it's planted.

We are needing a few live salesmen to take exclusive charge of good territory in various sections of the Northwest. Write us for our terms to salesmen.

Toppenish Nursery Company
Toppenish, Washington

Unsurpassed Nursery Stock grown in the famous Yakima Valley

Orchard Tract

Ten acres rich orchard land in famous Rogue River Valley. Write for description and price. CHAS. E. HICKS, Independence, Oregon.

FRUIT Western Soft Pine. Light, strong and durable.

"Better Fruit" subscribers demand the "Better Box."

BOXES

CAN MAKE TWO CARLOADS DAILY

Washington Mill Co.

Wholesale Manufacturers

Spokane, Washington

YOU SHOULD PLANT PEDIGREED TREES

In setting out an orchard everyone should use the same care in selecting his trees as he would in selecting the best seed or in selecting breeding animals to improve his herd. By careful selection and the propagation of nursery stock, the habits and fruit-producing qualities of the trees may be improved to a great extent, in the same way that one breeds up the quality of animals.

Winfield Trees Mean Quality

Our stock is propagated from trees that are producers and prize winners. Every block in the Winfield Nursery is tagged, referring to the record of these trees on file in our office. For instance, in our Jonathan block, the scions were selected from the individual trees that produced the fruit that won the prize for Jonathans at the National Apple Show at Spokane. It is a well known fact that individual trees in an orchard will bear oftener and more regularly than other trees in the same orchard.

By our methods of propagation you are more sure of getting your trees more absolutely true-to-name than where the scions are taken at random. I am sure that if I could talk to you I could convince you that our methods are correct. I would like to show your letters endorsing our methods from the prominent fruit growers and horticulturists connected with the agricultural colleges, but as it is impossible to visit every man who intends to set an orchard either this fall or next spring, we have prepared a booklet called "Progressive Horticulture," which you will find one of the most interesting booklets ever published for the fruit grower.

Don't delay, but write for a copy of "Progressive Horticulture" today.

Address WINFIELD NURSERY

J. M. MONCRIEF, President

Box 5, WINFIELD, KANSAS

not only by bringing fruit for exhibit but also by joining the society, as Oregon should have at least one thousand members. For further particulars address the secretary at 308 Sherlock Building, Portland, Oregon.

The premium list is not fully prepared, but is given below in as complete form as is possible at this time:

On dried fruits it is up to several of the large packers as to what they think would bring out the most dried fruit, but there will be at least \$100 cash prizes in addition to medals and diplomas.

The following nurseries have recently offered to donate nursery stock as prizes, but have not been assigned to varieties: Oregon Nursery Co., \$100 in trees; Vineland Nursery Co., 100 Spitzenberg trees; Yakima Independent Nursery Co., 500 3 to 4-foot assorted apple trees; J. B. Pilkington, 100 Rome Beauty trees 4 to 6-foot, for best box Rome Beauty; Milton Nursery Co., 250 two-year Yellow Newtown Pippin trees.

The prizes on dried prunes will be to growers on best cured product in five-pound lots on 40s and 60s, and on those larger than 40s, and will be either \$5 or \$10 as first prize, with second and third prizes.

District Prizes—The following prizes are open to any commercial club, fruit growers' organization, grower, or any combination of growers in any county or district:

No. 1. 100-box lots; total prize \$500 cash. Not less than three varieties and at least twenty-five boxes of each variety must be shown. These should be commercial sizes from 88 to 112. First prize, \$250 and gold embossed medal; second prize, \$125 and silver medal; third prize, \$75 and bronze medal; fourth prize, \$50.

No. 2 50-box lots; total prize \$275. Not less than three varieties, nor less than fifteen boxes of each variety; commercial sizes from 88 to 112. First prize, \$150 and gold embossed medal; second prize, \$75 and silver medal; third prize, \$50 and bronze medal.

The party winning first prize in No. 1 to donate fifteen boxes to the society and one taking second prize five boxes.

Party winning first in No. 2 to donate seven boxes and the one taking second to donate three boxes to the society. These apples are used for advertising purposes.

Individual Prizes—All contests, except those mentioned above, to be open to growers only.

No. 3. 25-box lots; total prizes \$500. First prize, \$75 and gold embossed medal; second prize, \$50 and silver medal. Prizes of \$125 will be offered as above on four varieties: Baldwin, Jonathan, Spitzenberg and Yellow Newtown.

No. 4. 10-box lots; total prizes of \$200. Five prizes of \$40 each will be offered on the following: Arkansas Black, Baldwin, Jonathan, Spitzenberg, Yellow Newtown. First prize, \$30; second prize, \$10.

5-box lots; total prizes, \$250. First prize, \$15; second prize, \$10. Ten prizes of \$25 each will be offered on the following: No. 12, Arkansas Black; No. 13, Baldwin; No. 14, Ben Davis or Gano; No. 15, Grimes Golden; No. 16, Jonathan; No. 17, Northern Spy; No. 18, Ortle; No. 19, Rome Beauty; No. 20, Spitzenberg; No. 21, Yellow Newtown.

3-box lots; total prizes of \$150. First prize, \$10; second prize, \$5. Ten prizes of \$15 each will be offered on the following: No. 22, Arkansas Black; No. 23, Baldwin; No. 24, Ben Davis or Gano; No. 25, Grimes Golden; No. 26, Jonathan; No. 27, Northern Spy; No. 28, Ortle; No. 29, Rome Beauty; No. 30, Spitzenberg; No. 31, Yellow Newtown.

Single box lots; total prizes of \$142.50. First prize, \$5; second prize, \$2.50. Nineteen prizes

of \$7.50 on the following: No. 32, Arkansas Black; No. 33, Baldwin; No. 34, Ben Davis or Gano; No. 35, Delicious; No. 36, Gravenstein; No. 37, Grimes Golden; No. 38, Hydes King; No. 39, Jonathan; No. 40, King of Tompkins; No. 41, Northern Spy; No. 42, Ortle; No. 43, Red Check Pippin; No. 44, Rome Beauty; No. 45, Spitzenberg; No. 46, Vanderpool; No. 47, Wagener; No. 48, Winesap; No. 49, Winter Banana; No. 50, Yellow Newtown. In addition to the cash prizes on the single boxes each party winning a first prize on single box will receive one Palmer apple picking bucket valued at \$1.50, offered by the Palmer Bucket Co. of Hood River.

Plate exhibits; total prizes, \$54. No. 51. Best exhibit of apples on plates. First prize, \$5; second prize, \$2.50; not less than five varieties.

Single plate exhibits; total prizes \$43.50. First prize, \$1; second prize, 50 cents. Twenty-nine prizes will be offered on single varieties on plates. No. 52, Arkansas Black; No. 53, Baldwin; No. 54, Ben Davis; No. 55, Gano; No. 56, Golden Russet; No. 57, Gravenstein; No. 58, Grimes Golden; No. 59, Hydes King; No. 60, Jonathan; No. 61, King of Tompkins; No. 62, Northern Spy; No. 63, Ortle; No. 64, Red Check Pippin; No. 65, Rome Beauty; No. 66, Roxbury Russet; No. 67, Spitzenberg; No. 68, Stark; No. 69, Swaar; No. 70, Talman Sweet; No. 71, Vanderpool; No. 72, Vandevere; No. 73, Wagener; No. 74, Wealthy; No. 75, White Winter Pearmain; No. 76, Winter Banana; No. 77, Yellow Bellflower; No. 78, Yellow Newtown; No. 79, York Imperial.

No. 80. A diploma will be given for meritorious display for best plate of any other commercial variety not mentioned.

No. 81. Largest apple. First prize, \$2; second prize, \$1.

No. 82. Judging contest of apple varieties; total prize, \$10. This contest will be open to the students of the Oregon Agricultural College, and to any grower or individual except the judges. This contest will be in complete charge of Professor C. L. Lewis and assistants of the Oregon Agricultural College. A large number of plates of sundry varieties will be on exhibit without names attached, and the party who can give correct names to the largest number will be declared winner. All growers are urged to bring plates of as many varieties as possible to enter in this

contest; also if they have any variety and are not sure of the name bring it along; this is your chance to find out what it is. Also bring new and promising seedlings. Five apples constitute a plate. First prize, \$7.50; second prize, \$2.50.

Pears—No. 83. Three-box lots; total prizes, \$35. First prize, \$25; second prize, \$10; third prize, bronze medal.

Single box lots; total prizes, \$57.50. First prize, \$5; second prize, \$2.50. Five prizes of \$7.50 will be offered on the following: No. 84, B. d'Anjou; No. 85, Comice; No. 86, B. Clairgeau; No. 87, P. Barry; No. 88, Winter Nelis. In addition to the cash prizes on single boxes of pears each one winning a first prize will receive one Palmer apple picking bucket, offered by the Palmer Bucket Co. of Hood River.

Pears on Plates—No. 89. Best exhibit on plates. First prize, \$5; second prize, \$2.50. This exhibit must consist of not less than three varieties.

Single plate exhibits; total prizes, \$7.50. Five prizes on single plate exhibits will be offered. No. 90, B. d'Anjou; No. 91, B. Clairgeau; No. 92, Comice; No. 93, P. Barry; No. 94, Winter Nelis.

No. 95. A diploma will be awarded as meritorious display (where only one entry is made, and as first and second prize where two or more exhibit same variety) for best exhibit of any other commercial variety not mentioned above.

Nuts; total prizes, \$7.50. No. 96. Best exhibit of nuts. First prize, \$5; second prize, \$2.50. Five prizes are offered for the following (first prize, bronze medal; second prize, diploma): No. 97, Franquette Walnut; No. 98, Mayette Walnut; No. 99, Praeparturien Walnut; No. 100, Parisienne Walnut; No. 101, Barcellona Filbert; No. 102, Du Chilli Filbert.

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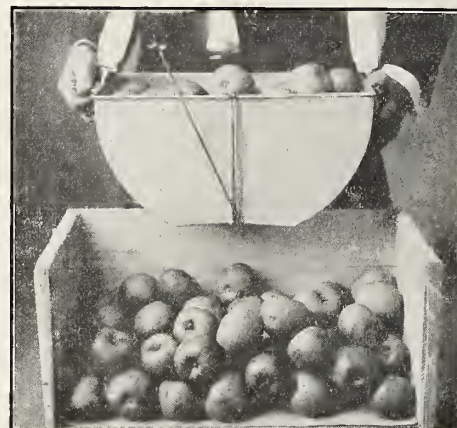
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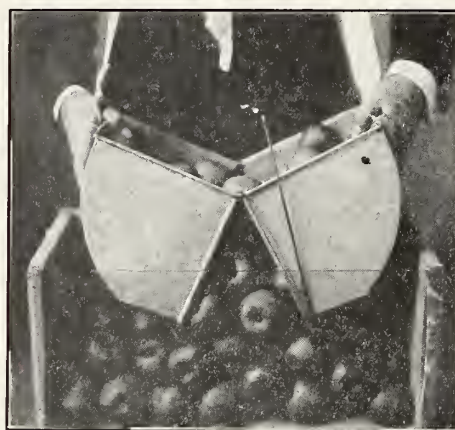
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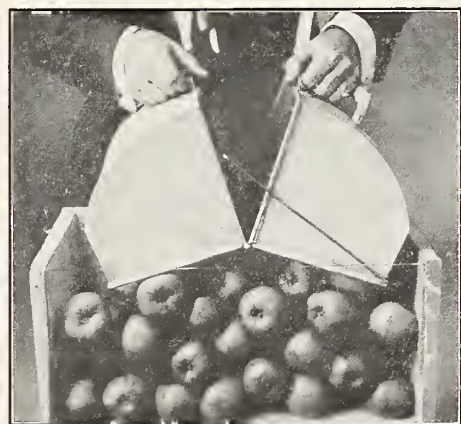
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FOR LIST OF AGENTS SEE PAGE 53

Fourth National Apple Show November 23 to 30

By August Wolf

FIVE hundred dollars in gold and a massive silver loving cup, suitably engraved, presented by the International Apple Shippers' Association, will be awarded to the exhibitor of the best packed carload entered at the Fourth National Apple Show in Spokane, November 23 to 30. The total value of the prizes and premiums is \$20,000. The judges will award prizes of \$300 to firsts and \$100 to seconds in carload contests on each of these varieties:

Jonathan, McIntosh Red, Rome Beauty, Spitzenberg, Wagener, Winesap, Yellow Newtown; also on the best mixed car of standard winter varieties, each to consist of at least fifty boxes, and the best car of any standard variety not named in the foregoing. A special premium of \$200 is offered for the most artistically decorated entry in the carload class. "The trustees think this arrangement of the carload prizes will be more satisfactory to all the growers

and districts than was possible by the terms of the championship contest, which was heretofore a feature," said Harry J. Neely, first vice-president of the National Apple Show, Inc. "The championship prize was \$1,000. It is possible for an exhibitor to receive a similar amount besides gaining three distinct honors: Winning first on pack, first in his class on variety and first for decorative features. Another thing is that certain varieties will not be forced into competition under a handicap because of the higher quality rating of other apples. The carload contest calls for entries of 630 boxes, or 210 barrels. The exhibitor must be the owner, lessee or authorized agent of the land where the apples were grown and give a sworn statement when making entry that the apples were grown in one orchard. The judges will consider quality, color, size, uniformity, condition and pack in scoring to make the awards.

Another competition is to bring out originality in design and attractiveness of display, not necessarily of a commercial value; is open to associations, districts, societies, lodges or unions having a membership of more than five persons. Two hundred dollars will be awarded for the most unique and artistic display, the second prize being one hundred dollars. Wide latitude is allowed in designs and decorations, and birds, animals, buildings, maps and other features may be worked out in the scheme. There also will be a similar contest open to individuals, the first prize being \$200, with \$100 for the second. These displays will be passed upon by a committee of special judges, who will consider only the merits of the unique and artistic sides of the exhibits. As an added inducement the judges will award premiums of \$50 each to the five contestants whose displays rank closest to the winners of first and second prizes. One hundred dollars to the first and \$50 to second is offered for general collective displays of apples grown on irrigated land and shown by commercial clubs, associations, unions, counties or districts, but not by individuals. The same provisions apply for the best general collective display of apples grown on nonirrigated land. The first prize is \$100, the second being \$50. Fifteen competitions are announced in the ten-box classes, tak-

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has just closed the most successful and prosperous year in its history. We want to make 1911 even more successful than the year just passed. We want *your* name upon our subscription list. Here are a few facts which will help you to decide the question of subscribing.

¶ The Pacific Monthly is recognized as the most successful independent magazine in the West. It publishes each month artistic and unusual duotone illustrations of beautiful Western scenery, studies of Indian heads, or of animal life, ranging from Alaska, on the North, to Mexico on the South, and as far afield as Japan and the South Seas. From its striking cover design to the last page you will find a feast of beautiful pictures.

¶ Each month it publishes from five or six short stories by such authors as Jack London, Stewart Edward White, Harvey Wickham, D. E. Dermody, Seumas MacManus, Fred. R. Bechdolt, and other well known writers of short stories. Its stories are clean, wholesome and readable.

¶ Each month one or more strong articles are published by such writers as William Winter, the dean of dramatic critics, John Kenneth Turner, the author of "Barbarous Mexico", Rabbi Wise, the noted Jewish Rabbi, and John E. Lathrop, who contributes a non-partisan review of national affairs. Charles Erskine Scott Wood contributes each month under the title of "Impressions" a brilliant record of personal opinion.

¶ The Pacific Monthly has become noted for having published some of the best verse appearing in any of the magazines. Charles Badger Clark, Jr., contributes his inimitable cowboy poems exclusively to The Pacific Monthly. Berton Braley, George Sterling, Elizabeth Lambert Wood, Wm. Maxwell, and other well known poets are represented by their best work in our pages.

¶ A feature that has won many friends for The Pacific Monthly has been our descriptive and industrial articles. During the coming year one or more such articles will be published each month. Articles now scheduled for early publication are: "Money in Live Stock on the Pacific Coast", "Success with Apples", "Nut Culture in the Northwest", "Success with Small Fruits", "Fodder Crops in the Western States".

¶ In addition to these articles the Progress and Development Section will give each month authoritative information as to the resources and opportunities to be found in the West. To those who are planning to come West, the descriptive illustrated articles on various sections of the West will be invaluable.

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ing in standard varieties, with first prizes of \$40 and \$20 to seconds and added premiums for pack. There will be fifteen competitions in the five-box classes, with first prizes of \$25 and second prizes of \$15; also added pack prizes. An added contest in this class is for five varieties in as many boxes. The first prize is \$50 and \$25 for the second. In the single box class there will be thirty competitions, the varieties including thirty of the best known standard winter apples, with first prizes of \$10 and second of \$5. There will be additional prizes on pack. \$75 is offered for the heaviest pyramid of fifty apples, weight to determine the award, with \$25 as the second prize. Other contests on big apples are for entries of plates of five apples, circumference to determine the awards. The first prize is \$25, with \$15 to second. The exhibitor of the largest single apple will receive \$20, the second largest \$10. \$40 to firsts and \$20 to seconds are offered for displays of one barrel, or three boxes, of any variety grown in the Eastern, Middle Western, Southern and Northwestern groups of states and districts or provinces outside of the United States. A gold medal banner will be awarded to the manufacturer or distributor of the most practical and economical new appliance for use in planting, cultivating, picking, packing or marketing. The second prize is a silver medal banner. Four hundred prizes of two dollars each to firsts are offered for plates of five apples. This competition is

open to all varieties. Cups, gold and silver medals and banners and trophies are offered for exhibits of factory and home-made apple by-products; also for new varieties and photographs and designs reproduced on apples. The added premiums in the foregoing contests are nursery stock, orchard implements, spraying machinery and materials, and numerous other articles of value to orchardists. The contests in all classes are free and open to the world, no charge being made for the space occupied in the exhibition halls.

Editor Better Fruit:

The Fourth Annual Exposition of the National Horticultural Congress will be held in St. Joseph, Missouri, November 23 to December 3, 1911, inclusive. St. Joseph is a very wealthy city of from 90,000 to 100,000 people, and its location for an exposition of this character is ideal. They have a mammoth new auditorium building three times as large as the one at Council Bluffs, and will be able to properly house and care for an exposition many times larger than any of the previous ones. The premium committee will soon be able to send you the preliminary premium list. I can assure you now, however, that when you receive the official premium list that it will be very attractive to you. The educational features will be about the same as last year. The attendance will be four times greater. Now, to get down to business. I want you to get in touch with your growers

and have a display there equal to, or better if possible, than the one you had at Council Bluffs last year. I don't know of anyone in your state or district who can do this better than you, and you will realize the necessity of prompt action. The exposition committee very much desires to have all of the old exhibitors take part in the coming exposition at St. Joseph. Won't you kindly advise me at once regarding prospects? Mr. Frederick Neudorff of St. Joseph, Missouri, is the president of the local organization. I am to be the superintendent and corresponding secretary. Address me at Council Bluffs until October 1, 1911. Sincerely yours, Freeman L. Reed, Superintendent National Horticultural Congress, Council Bluffs, Iowa.

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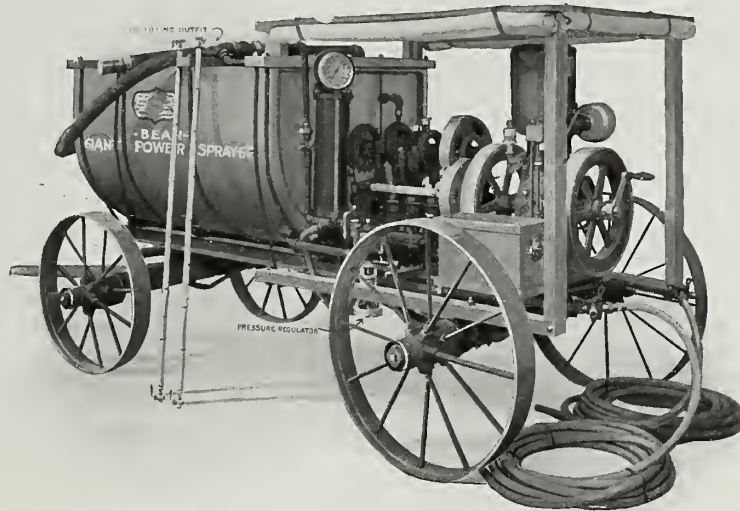
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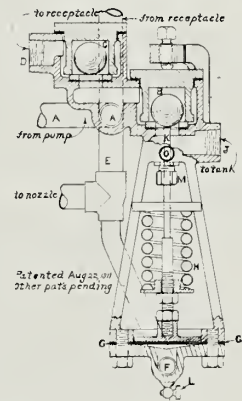
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Photo taken August 20, 1911

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The Cove, Oregon, Cherry Fair

By George Rieben, Judge

ON the nineteenth of July last there was held in the town of Cove a cherry fair which doubtless excelled any similar exhibition of fruit ever held in Eastern Oregon. The principal feature, of course, was the cherries, but there were also several other very interesting items which aided in keeping things alive all day, such as musical selections, a speech by "Jerry" Rusk, speaker of the House, baby show and a baseball game. Lunch was served at noon, and one could get all of the free cherries that one wished. The cherry exhibit proper consisted of about one hundred boxes Bings, seventy-five Royal Ann, twenty Black Republicans, some Lamberts, some pickled in jars and eighty boxes of mixed varieties used in making pretty designs of various descriptions. These boxes were set on slanting shelves, as in every large fair. They were all packed very neatly and with about a half-inch bulge in the middle, and any of them would have stood shipment very well. The package used was the standard double ten-pound wooden box. It is all the more gratifying for us to know that all, or nearly all, of them were placed upon exhibition in identically the same condition as they were to be placed upon the market, for they were packed with that intention. The competition for the ribbons was exceedingly close, especially in the Bing and

Royal Ann class, and it showed that the growers took much interest in the class of fruit which they put out. After this each of the four largest towns in the Grand Ronde Valley is to have an annual fair—Elgin the apple fair, La Grande the county fair, Union the stock show and Cove the cherry fair. This was the first fair under the new arrangement, and considering everything it was a success, and the people of Cove are to be commended for the way in which they entertained their visitors.

Scores of premiums to winners at the Fourth National Apple Show have been offered by various manufacturers of orchard implements, publishers of fruit journals, makers of apple boxes and others directly or indirectly interested in the development of the apple business. Among the prizes offered are the following: Number of pruning knives, International Tool Company of Detroit; Edgemont lid press, H. Platt & Sons of Como, Montana; 200 Bolton orchard heaters, Frost Prevention Company of San Francisco; prize to be selected from the Inland Empire Biscuit Company; fifty subscriptions to "Better Fruit," E. H. Shepard, the editor; fifty subscriptions to the "Northwest Horticulturist," C. A. Tonneson of Tacoma; ten two and a half-pound tins of "Black Leaf," Ken-

tucky Tobacco Products Company; Acme orchard harrow, John Deere Plow Company; fifty buckets, Palmer Bucket Company, Hood River, Oregon; extension frame orchard disc harrow, Parlin & Orendorff Plow Company, Portland; loving cup, A. C. Rulofson, Pacific Coast sales agent for the J. C. Pearson Company of Boston; orchard disc harrow, International Harvester Company of America; one thousand fruit boxes, Washington Mill Company of Spokane; two orchard ladders, Oregon Ladder & Manufacturing Company; improved orchard machine, Light Draft Harrow Company of Marshalltown, Iowa; lightning fruit picker, Lightning Fruit Picker Company.—Spokane Chronicle.

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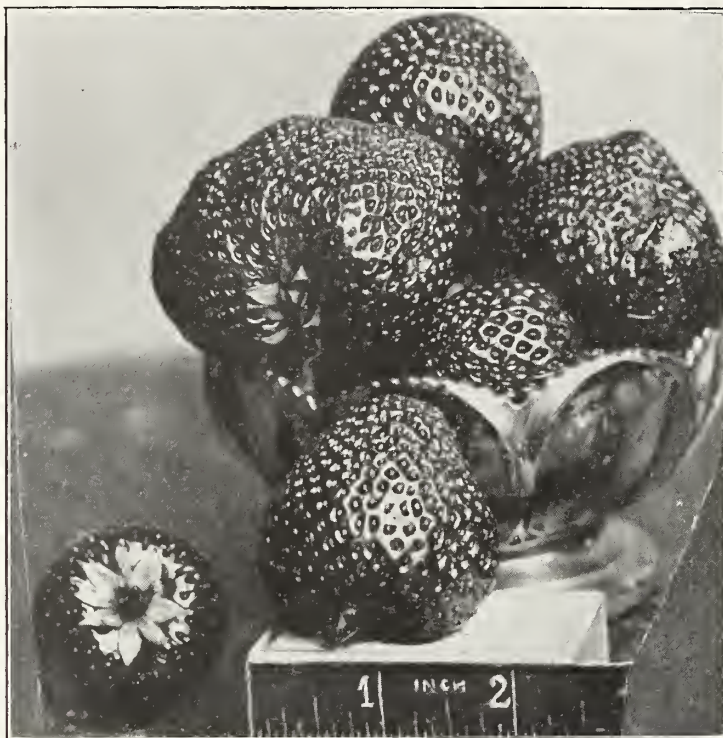
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Jonathan	140,212
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Spitzenberg	54,301
Arkansas Black	2,450
McIntosh	56,646
Variety List	13,645

PEACH

Elberta	107,797
Salway	20,488
Slappy	19,391
Early Crawford	37,848
Late Crawford	10,388
Carmen	7,432
Tusean Cling	2,284
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APRICOT

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Lambert	7,898
Royal Ann	1,856
Varieties	2,291

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THE SUNNYSIDE NURSERY CO., Sunnyside, Washington

The Governor's Special

AN event of the utmost importance to the State of Oregon and the entire West is about to take place in the departure of a monster special train laden with exhibits of the products of this state and each one of the other twelve that comprise the mighty Western empire. This train is to be called the "Governors' Special" from the fact that it will number among its passengers, if the plans now under consideration take effect, each one of the thirteen governors of the West, comprising the chief executives of the States of Oregon, Washington, Idaho, Montana, Colorado, Utah, Nevada, California, Wyoming, North and South Dakota, Nebraska and Minnesota.

The "Governors' Special" will be made up at Omaha immediately after the big land show that is to be held there, and will visit all of the important cities in the East. The committees in each state having the matter in charge will send their most comprehensive exhibits to Omaha, where each will become an integral part of the complete exhibit of the resources of the West, for the purpose of making a tour of the East. Among the cities to be visited are Omaha, Chicago, Pittsburgh, New York City, Washington, D. C., and St. Paul, and from the interest already created in the forthcoming visit of the train in those cities the tour will be fraught with exceptional opportunities for creating an exodus

from the crowded centers of the East to the boundless stretches of the West. Each state participating is called upon to contribute \$1,000 as its share of the expenses of the trip in addition to furnishing its exhibit. On account of the large number of states included in the monster exhibit the individual expense is very low, and never before have the states of the West had the opportunity of advertising their resources so thoroughly in such a promising field at so little expense. On this account it is hoped that each state will not delay in the matter of arranging for its participation.

Before disbanding at St. Paul, the "Governors' Special" will exhibit at all of the big land shows and fairs in the East, thereby assuring that the resources of the West will be thoroughly exhibited to the farmers of the Eastern states. In view of the fact that the East has suffered from a disastrous drought during the past summer while the West, and especially the Northwest, is enjoying a harvest of more than ordinary magnitude, the present is an opportune time to display the agricultural and horticultural prosperity of the Northwest to the drought stricken populace of the Middle West and the East.

Ex-Governor James H. Brady of Idaho, president of the Western Development Association, under whose auspices the trip will be made, is the orig-

inator of the plan, and to him is due the credit of the immense success that it has met. In the beginning the project was regarded as being one of too great proportions to be accomplished, and but little encouragement was given Mr. Brady, but a brief time had elapsed, however, until there was a general recognition of the advantages to be gained by such a trip, and as a result each state in the West has taken up the proposition with enthusiasm. Governor M. E. Hay of Washington has wired Reilly Atkinson of Boise, who has been appointed manager of the train, stating that Washington would participate and that he would be one of the number of Western governors who would be on the "Governors' Special." Washington is the first state that has served official notice of its participation in the movement destined to give such an impetus to the development of the great Northwest, but it is thought that all will have served similar notice in a few days. President Brady and Manager Atkinson left on Monday for Omaha to complete the final details of the project.—Contributed.

FOR SALE—Ten acres in Mount Hood region, on which is located store, creamery, ice cream parlor, butcher shop, three-story warehouse, slaughter house and small barn. The sale will also include a cow, three horses and wagon. Creamery equipped with \$1,500 worth of modern machinery, and butcher shop with \$200 worth. Living apartment in rear of store, with sitting rooms and ten bedrooms overhead. Fine well six feet from rear of house. Will take Portland property in part payment. Write or call on S. A. Helmer, 53 North 18th and Davis, Portland, Oregon.

APPLE STORAGE—410,000 Box Apples Capacity

Our Apple Department is constantly in touch with the market and we are therefore in a position to give storage customers best results

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Main Office, VINCENNES, INDIANA

Plants at Vincennes, Indiana; Flora, Illinois; Seymour, Indiana; Washington, Indiana

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Largest Handlers of Pacific Coast Fruits in the East

REPRESENTING THE FOREMOST WESTERN SHIPPING COMPANIES AND ASSOCIATIONS
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Operating in All Producing Sections

RELIABLE

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Five Stories
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IN BUSINESS OVER 30 YEARS

Incorporated—Capital \$100,000.00

On one of the most conspicuous corners of the fruit and produce district. Handle all kinds of produce and want to get in touch with Western shippers of peaches, plums, prunes, etc. Box apples we shall make a specialty. Prepared to handle business of large associations, being fortified with ample capital to take care of any deal. Correspondence solicited.

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We handle thousands of cars of fruit yearly, Apples, Pears, Peaches, Prunes, Etc.

A THRILLING STORY

is told by hundreds of FRUIT GROWERS in every state in the Union from windy Texas to Washington State of their great achievements in overcoming from one to fifteen degrees of frost in their orchards by the use of



THE HAMILTON RESERVOIR ORCHARD HEATERS

Every grower freely claims that his successes were due almost entirely to the REGULATED FIRE feature, which permitted him to secure two, three or even four times as much fire at the time of most severe frost, the most critical hour of the night. Many also tell us of having lost their crops by the use of small pots that could not be regulated to give greater fire to meet the critical hours. Forever the question of the vast supremacy of the large RESERVOIR HEATER with the REGULATED FIRE has been established. We have abundance of proof that the only ORCHARD HEATER equipment on the market today that affords the grower absolute protection against the most severe weather conditions and wind is the

HAMILTON RESERVOIR HEATER either in three or six gallon size

It is the most EFFECTIVE, most ECONOMICAL and the SIMPLEST in construction and operation. Our new literature is now ready, containing much of interest to you and expert advice on these points, which is free. We welcome your inquiries. Better write today. Don't wait two or three months.

Good Agents Wanted Everywhere

HAMILTON ORCHARD HEATER CO., Grand Junction, Colorado

How They Do Things in New York

OVER the signature of John L. Walsh, commissioner of the mayor's bureau of weights and measures, the following notice was sent to produce dealers and commission merchants relative to the sale of apples, pears and quinces in the City of New York:

I desire to serve notice upon you that on the first day of November, 1911, and thereafter I shall enforce section 395A of the code of ordinances of the City of New York, and sections 5 and 9 of chapter 20 of the consolidated laws, general business laws of the State of New York, relative to the sale of apples, pears and quinces in the City of New York. Apples, pears and quinces, when sold by the barrel, shall conform in size with the standard barrel as specified, as follows: "Sec. 9. Barrels of Apples, Quinces, Pears and Potatoes. A barrel of pears, quinces or potatoes shall represent a quantity equal to one hundred quarts of grain or dry measure. A barrel of apples shall be of the following dimensions: Head diameter, seventeen and one-eighth inches; length of stave, twenty-eight and one-half inches; bulge, not less than sixty-four inches outside measurement, to be known as the standard apple barrel. Or where the barrel shall be made straight or without a bulge, it shall contain the same number of cubic inches as the standard apple barrel. Every person buying or selling apples, pears, quinces or potatoes in this state by the barrel shall be understood as referring to the quantity or size of the barrel, specified in this section, but when potatoes are sold by weight the quantity constituting a barrel shall be one hundred and seventy-four pounds. No person shall make, or cause to be made, barrels holding less than the quantity herein specified, knowing or having reason to believe that the same are to be used for the sale of apples, quinces, pears or potatoes, unless such barrel is plainly marked on the outside thereof with the words "short barrel" in letters of not less than one inch in height. No person in this state shall use barrels hereafter made for the sale of such articles of a size less than the size specified in this section. Every person violating

any provision of this section shall forfeit to the people of this state a sum of five dollars for every barrel put up, or made or used in violation of such provision." And no barrel marked "short" will be permitted to be used for the sale of apples, pears or quinces in the City of New York. "Sec. 395a. No person shall manufacture, construct, sell, offer for sale or give away any dry measure or liquid measure, nor any barrel, pail, basket, vessel, container, intended to be used in the purchase or sale of any commodity or article of merchandise which shall not be so constructed as to conform with the standards provided by statute. Nor shall any person use any barrel, cask, pail, basket, vessel or container in the purchase or sale of any commodity or article of merchandise which does not conform to the standards provided by law, under a penalty of one hundred dollars for each offense."

Section 5, chapter 20, consolidated laws, general business laws of the State of New York, provides as follows: "Sec. 5. Units of Capacity. The units or standards of measure of capacity for liquids from which all other measures shall be derived and ascertained shall be the standards designated in this article. The barrel is equal to thirty-one and one-half gallons, and two barrels are a hogshead. The parts of the liquid gallon shall be derived from the gallon by continual division by the number two, so as to make half gallons, quarts, pints, half pints and gills. The peck, half peck, quarter peck, quart, pint and half pint for measuring commodities which are not liquids shall be derived from the half bushel by successively dividing that measure by two. The standard of measure for buying and selling strawberries, raspberries, blackberries, currants, gooseberries, plums, cherries, cranberries and other small fruits shall be the quart, which shall contain, when even full, sixty-seven and two-tenths cubic inches; the pint, which, when even full, shall contain thirty-three and six-tenths cubic inches; the half pint, which, when even full, shall contain sixteen and eight-tenths cubic inches; multiples of the quart, which, when

even full, shall contain like multiples of sixty-seven and two-tenths cubic inches." Apples, pears or quinces, when sold in boxes, crates or containers other than as specified in sections 5 and 9 of the general business law, or section 395a of the code of ordinances, shall be plainly marked or labeled on the outside of the box, crate or container with the net weight or measure of the contents.

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Hood River's largest and best store

Retailers of

EVERYTHING TO WEAR

Agents for

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THE BROWN SHOES**

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Strictly Cash—One Price to All

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Land, irrigation and orchard schemes examined for owners, buyers, bonding companies or advertising agencies—Orchard and land values estimated—Orchard soils examined—Directs orchard development—Land damage claims estimated—All business confidential.

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Members of the International Apple Shippers Association

We use Revised Economy Code

The F. J. Pomeroy Co.

84 DETROIT ST. Milwaukee, Wis.

Branch at Medina, N. Y.

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**Apples, Fruits, Potatoes
Melons and Cabbage
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CAR LOTS A SPECIALTY

We handle 200 carloads of Apples and better per Season

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BROKERS

Carlots
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Apples

Wire Us
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Prices.
We Will
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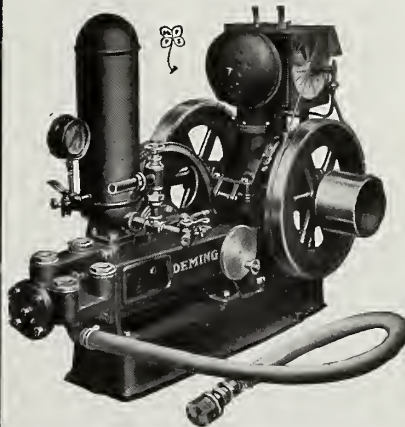
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Always Ready When You Are

You can depend on a Deming outfit as on a trusted friend—it is always reliable, ready for business, and does just as thorough work at the finish as at the start.

The qualities that make Deming Spray Pumps speedy, durable and capable of making and holding high pressure, make them reliable and trustworthy too. We build them by *knowledge of orcharding conditions*—not by theory. Successful growers say our machines are properly designed and correctly built—whether the little bucket or knapsack affair, or the gasoline engine-driven outfit that holds the gauge steady at 150, 175 or 200 pounds.

The profit you clean up on your fruit depends largely on your spraying outfit. Don't take chances; if you aren't absolutely sure you have the most reliable and dependable outfit you can buy, see your local dealer, or write



CRANE CO.

Pacific Coast
Agents

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The Deming Company
Manufacturers
870 Depot St., Salem, Ohio

Hydraulic Rams
Hand and Power Pumps
for All Uses

This Light Weight Grader Will Solve Your Irrigation Problems

It is an all-steel one-man machine. It weighs only 600 pounds. It will stir your soil, level your land, cut laterals, pick up dirt and drop it where you want it, and cut ditches 24 to 36 inches deep at a cost of 2 cents a rod. It will do more work than big heavy graders in less time and with less effort. One man with two horses operates it. Ditches cut with the 20th Century Grader are "V" shaped, with firm, solid sides—no fear of their being washed down.

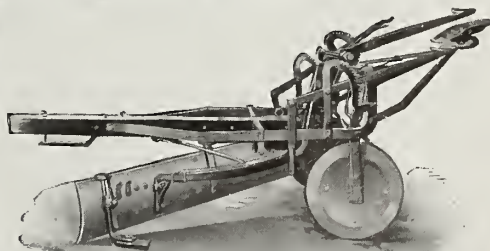
20th Century Grader

is a many purpose, easily operated machine that pays for itself over and over again and puts money into your pocket.

To get big results your work must be right, so you must have the right machine.

Let us tell you what others say about this wonderful machine. We want to prove to your satisfaction that it's a genuine money-maker. There are many uses to which the 20th Century Grader is specially adapted and many ways you can make big money by using it on your own land and on your neighbors'.

Write for our interesting and valuable free book giving full information about this money-making machine, what it has done for thousands and will do for you.



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The Tim Kelly Nurseries

TIM KELLY
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WAPATO, WASHINGTON

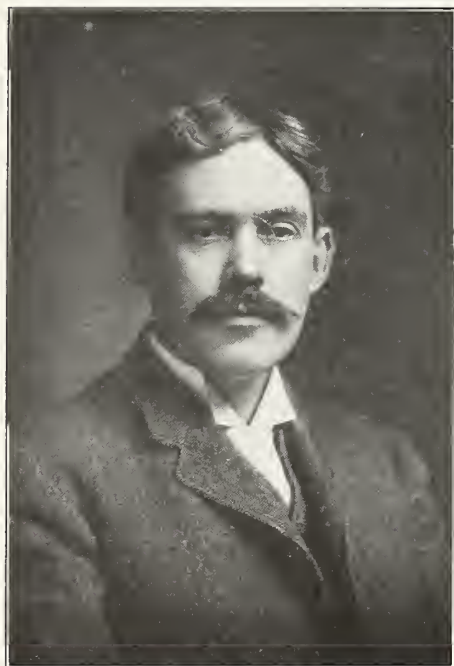
Two Million Trees for Fall and Spring Planting

I have a splendid stock of APPLES, PEACHES, PEARS, PLUMS, PRUNES,
ORNAMENTAL TREES AND ROSES

For Special Prices write to TIM KELLY, Box 197, WAPATO, WASHINGTON

Prominent Ohio Commission House

THE firm of M. O. Baker & Co., Toledo, Ohio, has been in business since 1898. Their specialty from the beginning has always been apples. They are not speculators, but buy and handle on commission the best grades



M. O. Baker
Of M. O. Baker & Co., Toledo, Ohio

of fruits, and store quite largely for their regular trade. They have a regular and extensive trade not only with all the best retail dealers in Toledo, but in all the surrounding territory. Toledo is the third largest railroad center in the United States, and one of the best (if not the best) distributing points in the Central West or the United States. Goods can be diverted from Toledo east, west, north or south on through billing. Toledo has good cold storage facilities, and shippers sending apples to M. O. Baker & Co. can either have them sold on arrival or placed in cold storage to be sold at some more favorable time. In addition to their extensive trade with retail grocers they have an excellent business with small jobbers in adjacent territory. Every season they handle anywhere from one hundred to two hundred cars of apples, depending upon conditions. Ask any dealer in Toledo about apples and they refer you to M. O. Baker & Co. as leaders in that line, and where apples can always be had. If you have apples or any other kind of fruits or produce for sale place them with M. O. Baker & Co., Toledo, Ohio, and you may rest assured your interests will receive the very best care and attention, as both M. O. Baker and B. A. Baker understand the business from A to Z and are always on their job.



B. A. Baker
Of M. O. Baker & Co., Toledo, Ohio

Hood River Grown Nursery Stock for Season 1911-12

Standard Varieties.
Prices Right and Stock First Class

C. D. THOMPSON, Hood River, Oregon

ALFRED W. OTIS

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NEW YORK, N. Y.

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Apples for American and Foreign Markets

AGENTS FOR

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SHIPMENTS FORWARDED FROM BOSTON OR NEW YORK

Market quotations and full particulars on application

Correspondence invited

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For both Passenger and Freight Traffic to and from Madras,
Metolius, Culver, Opal City, Redmond, Bend and
other Central Oregon points

SCHEDULE

Lv. Portland	{ 7:50 A.M.	Lv. Opal City	8:15 A.M.
	{ 10:00 A.M.	Lv. Metolius	8:43 A.M.
Lv. The Dalles	12:40 P.M.	Lv. Madras	9:00 A.M.
Lv. Deschutes Je.	1:30 P.M.	Ar. Deschutes Je.	1:15 P.M.
Ar. Madras	5:45 P.M.	Ar. The Dalles	1:55 P.M.
Ar. Metolius	6:00 P.M.	Ar. Portland	5:45 P.M.
Ar. Opal City	6:30 P.M.		

Auto and regular stage connections to La Pine, Fort Rock, Silver Lake,
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**The Direct, Quick and Natural Route between Portland
and All Points in Central Oregon**

Call on any O.-W. R. & N. Agent for any information desired, or address

WM. McMURRAY
GENERAL PASSENGER AGENT
PORTLAND, OREGON

The American Express Company, in connection with the National Express Company, having named exceptional rates on apples, we will deliver to any point in the United States or Canada where the American Express or the National Express Company has an office

ONE OF OUR WELL KNOWN SEVENTEEN POUND BOXES OF

Extra Fancy Hood River Apples

AT FOLLOWING PRICES. ALL CHARGES PREPAID (excepting duty charges)

Spitzenbergs, \$2.25; Newtowns, \$2.25; Ortleys, \$2.25; Winter Bananas, \$2.50

Express Money Order, Check or Cash should accompany all orders. To points beyond the American or National Express lines 30 cents should be added to cover additional express charges

None but Extra Fancy Apples
shipped in these packages

Crocker & de Reding, Hood River, Oregon

American Apple Congress at Denver

AN effort will be made to have the next session of the American Apple Congress held in a city in the East or Middle West. Representatives of the apple districts in both these sections will attend the second annual meeting of the congress with the avowed intention of electing the next president. This information has been received at the headquarters of the congress in Denver. Salt Lake City, Utah, is the Western city most prominently spoken of as the next place of meeting if the congress does not go East. The congress will be held in Denver, November 14 to 16, and will

be in session during the American Apple Exposition, which will also be held in Denver. Apple men in all sections of the country recognize that this organization is fast developing into an important association of apple growers, shippers and dealers, and that it may become the leading one of its kind on the American continent. It was organized last December in Denver and will be less than one year old when the second session convenes. Among the Eastern men who have been urged by their friends as candidates for president are N. G. Gibson of Chicago, C. C. Clemons of Kansas City, J. Howard Detwiller of Philadelphia and E. P. Loomis of New York City. The Western man most prominently spoken of at this time as a candidate for president is Elliott M. Sly of Kennewick, Washington.

While Colorado would like the honor of naming the next president the apple men of this state are satisfied with the honor of Denver being the birthplace of the congress, and they realize that the organization was created for the benefit of the apple industry of the entire American continent. Consequently Colorado wants every apple district in the country represented, and the delegates from this state can be depended upon to support any policy that will aid in building up the congress and that will make it a power for good and effective work in the

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BOX APPLES

Box Pears Box Peaches

Largest handlers of box fruit in this territory. Best modern storage facilities. Reliable market reports.

Top Prices
Prompt Returns

E. H. SHAFER & CO.
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The Campbell System

INSURES your crop against DROUTH. Our experience in 1910 and 1911 has proven that good crops can be grown with less than eighteen inches of rainfall. Those who followed the **Campbell System** in 1910 have a crop in 1911.

DON'T TAKE ANY RISKS FOR 1912

Campbell's publications explain the system.

Campbell's Soil Culture Manual . . \$2.50
Campbell's Scientific Farmer . . \$1.00
Combination Price \$3.00

Address

CAMPBELL SOIL CULTURE CO.
Lincoln, Nebraska

When you write ask about the **Campbell Correspondence School**.

apple world. The following declaration of principles illustrates the scope of the congress as set out in the official call:

Whereas, at the meeting held in Denver, Colorado, in the month of December, 1910, an organization designated as The American Apple Congress was formed with the following objects: To promote and diffuse knowledge concerning the apple industry on the American continent; to facilitate conference and deliberation among the people of the country concerning the growing and marketing of the apple crop and related interests; to provide means for bringing the needs of the people interested in the apple industry of the country before national and state governments; to provide ways

WEIL, TURNBULL & CO.

DETROIT, MICHIGAN

NINTH LARGEST CITY IN THE UNITED STATES

Will sell your goods at auction or at private sale. We have a large interest in the United Fruit Auction Company here and will guarantee best possible results and prompt remittance. Correspond with us if you contemplate doing business in Detroit. We will furnish references that will justify you in making us your Detroit connection.

WANTED Land Salesmen

CAPABLE OF EARNING

\$5,000 to \$10,000**A YEAR**

To sell highest grade irrigated fruit land in the country. Exceptionally attractive selling terms. This is the best paying proposition today for land men who are live wires in all sections of the country.

Address ROBERT S. LEMON

General Sales Manager

Bitter Root Valley Irrigation Co.

Suite 844-850

First National Bank Building
CHICAGO

BUY NOW CHERRY PEACH APPLE TREES

They occupy land that must be cleared

PRICES EXTREMELY LOWAlso several thousand California Privet and
Carolina Poplars cheap**WRITE TODAY FOR BARGAINS****M. BARNES' NURSERIES**

(College Hill) CINCINNATI, OHIO

Apple and Pear Root Grafts of highest
quality made to order

Established in 1855

At it 56 years

The apple is the king of fruits.
Our apples are kings of apples.

We are apple specialists. We sell
the very best apples at very attractive prices.

Fine Eating Apples
Cooking Apples
Special Purpose Apples

Carefully packed in boxes or barrels.

Remember, apples are staple goods,
but we have made them a specialty.

We wish to handle the output of
fruit associations as well as shippers.
It will pay you to get in touch
with us.

Sutton BrothersWholesale Fruit Dealers
COLUMBUS, OHIO

and means for securing profitable legislation for the industry; to organize and maintain a "Transportation and Railroad Rates Bureau"; to maintain a "Continental Information Bureau on Crops, Markets and Fruit Movements," and to promote and conduct apple expositions in connection with the congress; and

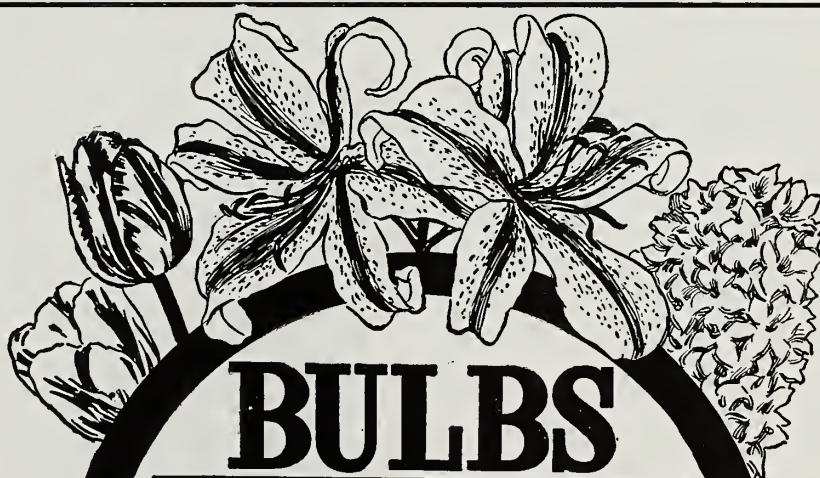
Whereas, there are numerous matters of importance which appeal mutually to all growers and dealers interested in the apple industry, especially as to the development of American orchard lands, the care of the orchards, fighting insect pests, fighting frosts, standardizing and systematizing the grading and packing rules, planning and securing legislation intended to benefit the industry; securing equitable freight and express rates for the shipment of our apples to market; planning better distributing and marketing, advertising our apple industry to secure new and desirable settlers for our apple lands, better immigration rates from the congested centers of population and from the less productive farm lands of other sections, and advertising the food values of the apple for the purpose of increasing the consumption of this "king of fruits"; and

Whereas, article 3, section 1, of our constitution provides for annual meetings; and

Whereas, the executive committee of this organization has decided that the

second annual session of this organization shall be held in the City of Denver, Colorado, on the 14th, 15th and 16th days of November, A. D. 1911, and have executed an agreement to that effect with The American Apple Exposition Association, which will hold a national apple show during the same week.

Now, therefore, in accordance with our constitution and with such decision and agreement, I hereby call such second annual session for the above days, and request the appointment of the number of delegates provided by the constitution in Article 7, Section 1, as follows, to-wit: The governor of each state to appoint fifteen delegates; the mayor of each town or city having 500 population or less to appoint one delegate; the mayor of each town or city having more than 500 population one delegate for each additional 500, provided that not more than ten delegates shall be appointed from any one town or city; the county commissioners of each county to appoint two delegates; the president of each regularly organized horticultural society to appoint three delegates; the president of each commercial body to appoint one delegate; providing also that the president of the United States, the governor of each state, the members of the congress of the United States, the horticulturist and the entomologist of each agricultural college and all members of state



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Send for our catalogue of Bulbs, Pansies and Sweet
Peas. Mailed Free.

Tulips are gorgeous flowers. Try Morse's Long Stem

Tulips mixed, 30c doz.; (postpaid 35c doz.); \$2 per 100

White Easter Lilies, \$1.50 doz. (Postpaid 35c doz.)

Auratum—Rubro—Vittatum Lily—is shown above. It is a
rare sort. 50c each.

Unusual Anemone Collections of new and rare Anemones
125 bulbs for \$1.95. (Postpaid for \$2.05)

"1911 Best" Bulb Collection, a fine assortment of
hardy Bulbs; 136 Bulbs for \$2.10. (Postpaid \$2.50)

Do you love Spring Flowers?

C. C. MORSE & Co.

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SAN FRANCISCO
CALIFORNIA

INCOME AND INDEPENDENCE

These are the two great essentials sought for by every fruit grower and there is no other factor in the establishment of an orchard that insures them more thoroughly than the character and kind of trees planted.

The nursery trees grown by the Hood River Standard Nursery Company—the **STERLING QUALITY** trees—are the most carefully grown and most thoroughly guaranteed trees in the country. They are propagated from the best and highest earning trees of the world famous Hood River Valley, and they cost you no more than ordinary trees.

At all of the leading apple shows, land expositions and fairs this year you will find these trees on exhibition. Go see them. Compare them with the usual run of nursery stock—then write us for our catalogue and guarantee.

HOOD RIVER STANDARD NURSERY CO.

HOOD RIVER, OREGON

A FEW LIVE SALESMEN WANTED TO REPRESENT US

boards of horticulture shall be honorary delegates to this convention. None but regularly appointed delegates will be recognized in the congress, but it is provided, however, that any person interested in the apple industry may become a permanent delegate or member by paying the initiation fee of two dollars and the annual dues of three dollars; and it is further provided that fruit growers' associations, fruit companies, fruit jobbing concerns and all other corporations interested in the apple industry shall be entitled to delegates and memberships as follows: If capitalized at less than \$50,000, on payment of \$25 annual dues, three delegates; if capitalized at \$50,000 or more, on payment of \$50 annual dues, five delegates. Delegates appointed shall be supplied with credentials from the authority which they represent, and no delegates should be appointed from towns or cities not interested in the apple industry.

In accordance with article 5, section 2, of the constitution, and in order that the meeting shall have a definite program, that the meeting may be properly advertised, the delegates suitably entertained and the objects of the congress accomplished, I hereby announce the following board of local managers to have charge of all local matters connected with the convention: B. F. Coombs, chairman Apple Congress executive committee; Arthur Williams, secretary Colorado State Horticultural Society; Clyde H. Smith, general man-

ager Intermountain Fruit Journal; W. F. R. Mills, secretary Denver Convention League; J. W. Kelley, D. & R. G. attorney; Thorndike Deland, secretary Denver Chamber of Commerce; S. F. Dutton, proprietor the Albany Hotel; George E. Collisson, secretary Denver Retail Association; Frank Adams, president Colorado Ice and Storage Co.; H. G. Wolff, nurseryman;

Mrs. Lute Wilcox, Denver Field and Farm. It is desired that the names and addresses of delegates appointed be forwarded to Clinton L. Oliver, secretary, suite 210-12 Chamber of Commerce Building, Denver, Colorado, as soon as appointed, so that they may be communicated with by the board of local managers prior to the convening of the congress.



Yoncalla Orchards Company

OREGON FRUIT LANDS

Plymouth Building, Suite 714

MINNEAPOLIS, MINNESOTA

This orchard tract adjoins the town of Yoncalla, Oregon, which is situated on the main line of the Southern Pacific Railway. No better land in the West. This tract of orchard land is being subdivided and sold in 5 and 10-acre tracts.

For further information write

THE YONCALLA ORCHARDS COMPANY

Plymouth Building, Minneapolis, Minnesota

(INCORPORATED)
SCALZO-FIORITA FRUIT CO.

ST. LOUIS, MISSOURI

Headquarters for
 Box Apples
 Oranges, Lemons

PRUNES
 PEARS
 PEACHES

Largest Fruit and Produce House in America
 70,000 Square Feet of Floor Space
 Members Western Fruit Jobbers Association

FORTY YEARS IN BUSINESS

Correspondence invited with associations and individual growers desiring first-class connection in St. Louis. Auction facilities unequaled. Will buy outright or handle consignments, private sale or through St. Louis Fruit Auction.

References: Franklin Bank, Dun and Bradstreet, any wholesale fruit house in the country.



PROMPT SAFE RELIABLE
LINCOLN, NEBRASKA
J. GRAINGER & CO.

ESTABLISHED 1887

WHOLESALE FRUIT MERCHANTS

Extensive Dealers in Extra Fancy Washington and Oregon

Apples, Pears, Peaches, Plums, Prunes

Managers of Associations will do well to correspond with us

REFERENCES

"Better Fruit"
 First National Bank, Lincoln, Nebraska
 Corn Exchange National Bank, Chicago, Illinois
 Chatham & Phoenix National Bank, New York, N.Y.

J. H. Bahrenburg, Bro. & Co.

103-105 Murray Street New York City, N. Y.

WE ARE PREPARED TO HANDLE YOUR SHIPMENTS OF APPLES
 in Foreign or Domestic Markets

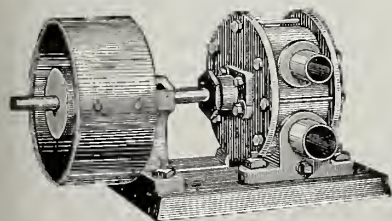
Our representatives in foreign markets are merchants with whom we have been associated in the apple business for a great many years, and whose ability we have learned to know.

We are also prepared to offer you

THE BEST STORAGE FACILITIES TO BE HAD
 in New York State as well as in New York City

For any further particulars, write the above address.

The pump you have always
 wanted but could never be-
 fore obtain



Patented June 2, 1903
 Improvements Pending

Every Pump Guaranteed
 Absolutely

The Ideal System of Irrigation

Saves power and money; utilizes the power; converts power into results; high heads without staging; deep wells, pits and mines. Mechanical perfection; simple; easily installed; free from wear; faithful and dependable machine. Made in many sizes, 25 gallons per minute to 10,000 gallons per minute. Address

Ideal Irrigation Rotary Pump Company

HENRY BUILDING

SEATTLE, WASHINGTON

Crutchfield, Woolfolk & Clore, Inc.

No. 11 W. SOUTH WATER STREET
CHICAGO

WHOLESALE DEALERS AND CARLOT DISTRIBUTORS

FOREIGN AND DOMESTIC FRUITS AND VEGETABLES

All Popular Codes. Cable Address "Cloe field." Bankers: National Bank of the Republic

THE BEST CHICAGO CONNECTION

Growers and shippers of Western fruits must have proper connections in Chicago if they expect to realize full market value of their fruit.

We have the best of connections on all the larger markets and the confidence and patronage of the carlot buyers on the smaller markets.

We have the most favorable auction connections and a good auction market in Chicago.

We have a large and attractive jobbing house on South Water Street and a thoroughly organized and competent sales force for handling local and country orders.

We have the organization and equipment for obtaining the full market value of fruits and vegetables when conditions are most unfavorable, as well as favorable.

Let us hear from you at once as to what you have to sell.

CRUTCHFIELD, WOOLFOLK & CLORE

Western Fruit Jobbers' Convention

At a recent meeting of St. Louis fruit jobbers committees were appointed to make arrangement for the reception and entertainment of the Western Fruit Jobbers' Association of America when they come to St. Louis for their annual convention on January 3, 4 and 5 next. James W. Corcoran, president of the St. Louis Fruit and Produce Exchange, was chosen chairman of the executive committee to arrange for the convention. Other members are J. E. Stewart, vice chairman; W. Ernest Reeves, secretary, and Manley G. Richmond, R. H. Pennington, Charles Devoto. A hotel committee, consisting of J. E. Stewart, James W. Corcoran and Manley G. Richmond, was also appointed. They have selected the Planters Hotel as convention headquarters, and many of the visitors will also be quartered

there. The entire parlor floor will be turned over to the jobbers for convention purposes. A finance committee, consisting of H. M. Smith, F. G. Hau-eiser, R. H. Whyte and J. H. Russell, was also chosen, and lost no time in commencing work. Within a few minutes they had \$1,000 pledged of the \$5,000 which they expect to raise for the entertainment of the visitors and their ladies. Entertainment and reception committees and a committee of ladies will be appointed later. Because of the central location of St. Louis this convention will without a doubt be one of the largest ever held by the association. Hotel reservations are already being made both with the Planters Hotel direct and through the secretary of the committees at the Fruit and Produce Exchange.

Non-Irrigated, Whole-Root Trees

We have them. Write us your wants. We pay freight and guarantee arrival in good condition. A Few Reliable Salesmen Wanted.

PACIFIC NURSERY COMPANY, 308 Corbett Bldg., Portland, Oregon

BARNETT BROS. 159 South Water Street CHICAGO

A Minute's Talk

with Western Fruit Associations, particularly those dealing in Apples, Cantaloupes and Peaches, are invited to correspond with us. We are able to put before you a plan for marketing your output in a manner satisfactory to you and mutually profitable.

Deal Direct and Save Agents Commission

We offer a full line of fruit trees grown on whole-root stock; also nut trees, small fruits, roses, etc. Our prices are sure to interest you. Catalog and price list on application

P. S.—Enclose this ad

Lafayette Nursery Co., Lafayette, Oregon

The Largest Planters in the World

Planting and care under the supervision of

Churchill-Matthews Company

506-8-10-11 Spalding Building
PORTLAND, OREGON

Sales to Eastern people of planted tracts with five years' care, August 1, 1911, equal

\$1,845,000.00

Sales and Selling Agencies under supervision of
BRANIGAR BROS.
BURLINGTON, IOWA

Dore-Redpath Company

Wholesale Fruits, Vegetables and Produce

Peaches, Pears and Box Apples Our Specialty

Get acquainted with us
St. Paul, Minnesota

OPEN LETTER TO NORTHWESTERN SHIPPERS

There are three (3) essentials to Successful Marketing

First—Facilities and Organization

Second—Expert Salesmanship

Third—Judgment, based on Knowledge and Experience

If you want maximum results communicate with us.

Yours truly,

CRUTCHFIELD & WOOLFOLK

PITTSBURG, PENNSYLVANIA

FREE EXPERT ADVICE

By Professor A. Van Holderbeke, five
years Washington State Horticulturist,

TO FRUIT GROWERS

Purchasing high grade nursery stock,
guaranteed true to name, from the

Van Holderbeke Nursery Company

Main Offices:
Columbia Building
Spokane, Washington

RELIABLE
AGENTS
WANTED

Nurseries:
Spokane Valley and
Kennewick, Washington

BUTTE POTATO & PRODUCE CO.

BUTTE, MONTANA

Jobbers of All Farm and

Orchard Products

We have a large outlet for fruits
and vegetables. We want to hear
from shippers.

A. J. KNIEVEL, President and Manager

Sixteen years' experience on the
Butte market.

THE EVANS & TURNER CO.

COLUMBUS, OHIO

ARE OPEN FOR CONNECTIONS IN THE EXTREME WEST ON

Apples, Pears and Peaches

We are members of National League of Commission Merchants and the Produce Reporter Company
References: The Union National Bank, Columbus, Ohio; Union Savings Bank, Manchester, Michigan

RIDLEY, HOULDING & CO.

Fruit Brokers and Commission Salesmen.
Covent Garden, London, July 19, 1911.
Editor Better Fruit:

We beg to inform you that the crop of early English dessert apples is only a fair one, the later varieties fairly good. This will not interfere with any of the Hood River apples, which are likely to arrive over here in the early part of the season. Prices are sure to rule well, as we hear the California apples are very light, and the quantity of box apples sent to this market will consequently be very light this year. The medium size apple suits our trade best, and we think it will prove a very useful outlet for the association apples which cannot be classed as the finest grade. Yours faithfully, Ridley, Houlding & Co.

Editor Better Fruit:

It cannot help but be gratifying to you to learn that I am still receiving letters asking further advice about walnut culture, the writers referring to my article published in "Better Fruit" two years ago. What surprises me is that these letters come from such distant districts; today I received one from Georgia and several from British Columbia, and not long ago letters from Wisconsin and Rhode Island, which proves that your magazine is not only distributed and read over the United States and British Columbia, but is doing a good missionary work in advertising our Oregon. Cordially, Henry E. Dosch, Villa Eichenhof, Hillsdale, Oregon.

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible. Try it.

Mills College

NEAR OAKLAND, CALIFORNIA

The only Woman's College on the Pacific Coast. Chartered 1885. Ideal climate. Entrance and graduation requirements equivalent to those of Stanford and University of California. Well equipped laboratories. Grounds comprise one hundred and fifty acres. Special care for health, outdoor life. Pres. Luella Clay Carson, A. M., Litt. D., LL. D. For catalogue address Secretary, Mills College P. O., Calif

GRASS SEED

Let us send you samples of our new vigorous crop grass seed—ready for immediate shipment. Lilly's Best Grass Seed is reliable, of high germination and recleaned by our up-to-date machinery. We have an expert grass seed tester who analyzes every sample sent us and every pound we offer for sale, not alone to comply with the pure seed law, but that we ourselves are satisfied that the seed is GOOD.

Send For Fall Catalog.

This is what one customer says:—"I have used your grass seed and have had fine results. It was the nicest and cleanest seed I have ever used."

A. L. GROSS
Starbuck, Wash.
For prices and samples
Write
Chas. H.
Lilly Co.
Seattle

BEST FOR THE WEST

LILLY'S BEST SEEDS

NORTHERN GROWN

For over a decade the leading seedmen of the Northwest



HERE'S a simple, strong, low-priced light-draft riding harrow which covers more surface with less draft than any other cultivator made. It works right up to the trees and under lowest branches without harming fruit or leaves in the least.

Forkner Light Draft Harrows

for Orchards and Vineyards

make it possible to thoroughly cultivate 20 to 30 acres per day with two horses. They lift and turn the soil and leave it in slight waves, thus exposing more surface to the chemical action of the sun and rain. They make a perfect dust-mulch, which conserves maximum amount of moisture.

Write for Free Trial Offer—and Booklet.

We will ship to responsible parties on 30 days' riskless free trial. Free booklet, "Modern Orchard Tillage," tells the whole story.

LIGHT DRAFT HARROW CO.
901 E. Nevada St., Marshalltown, Ia.

CHICO NURSERY COMPANY

GROWERS OF

High Class Nursery Stock

The best that good soil, care, skill and long experience can produce

Write us for prices on Grape Vines, Cherries, Apples, Peaches, Pears, Nut Trees, Ornamental Shade Trees, Flowering Shrubs and Roses
Peach Seed For Sale. Catalogue Free

CHICO NURSERY COMPANY, Chico, California

MODERN

COLD STORAGE

with every facility for handling and storing

Apples, Fruit, Produce

at any temperature desired.

Finest market and distributing point in the Northwest
Write for terms

De Soto Creamery and Produce Co.

Cold Storage Department

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The Best Farm Locations

Productive lands, favorable climate, and abundant rainfall make farm locations in the Southeast the most profitable.

Land from \$10 to \$50 an acre close to the best markets. Wheat, corn, hay, all truck crops, give best returns. Conditions unsurpassed for dairying and live stock, hog and poultry raising. Beef and pork produced at 3 to 4 cents a pound.

Five to six crops of alfalfa per season grown. Good farmers make 60 to 100 bushels corn per acre. Home markets near at hand pay highest prices for dairy products and demand is undersupplied. Apple orchards pay \$100 to \$500 an acre, and orchard lands cost only a fraction of those in other sections.

The Southeast Has Locations for Every Kind of Farming

The climate assures the finest results from intelligent agriculture, and makes the region unsurpassed as a pleasant and healthful home location. It is an open winter country, and its summers are enjoyable. You can locate where there are good schools, churches, roads, rural delivery, and all other advantages. The Southern Railway and associated lines will help you find the location you desire. Our several publications, free on application, give full information. Address,

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PHILADELPHIA, PENNSYLVANIA

Largest Dealer IN BOX APPLES on this Market

Philadelphia Supplies

WITHIN A RADIUS OF ONE HUNDRED MILES

Over Ten Million People

Make Your Arrangements Now, Cold Storage Facilities Unexcelled

We Represent some of the Largest Fruit Shipping

Concerns in the World

DO NOT OVERLOOK THE PHILADELPHIA MARKET

APPLES

"THE HOUSE TO DO BUSINESS WITH"

COYNE BROTHERS

APPLE SPECIALISTS

Write for Memo Loose Leaf Book. Mention "Better Fruit"

119 W. South Water Street, CHICAGO

Associations, Independent
and Individual Shippers

We desire to get in touch with you for the purpose of arranging to handle your apples. To that end we ask you to please write us at once, giving estimate of what your crop will consist of and the varieties of apples you will have.

Founded 1839

Capital, \$150,000.00, paid in

Incorporated 1904

JOHN NIX & COMPANY

281 Washington Street, NEW YORK CITY

WESTERN OFFICE, 220 No. State Street, CHICAGO, ILLINOIS

Pacific Coast Fruits and Vegetables

Our Store Centrally Located. One Block from Erie R. R. Depot



VIEW OF RICHLAND NURSERY, RICHLAND, WASHINGTON

The Richland Nursery Company

THE Richland Nursery Company, established in 1907, have developed a most profitable nursery business, equal in fact to anything of the kind in the country. With fifty acres of ground devoted solely to nursery stock, the reader can form some idea of the extensiveness of this business. About thirty-five acres of this land is used for fruit trees only; another fifteen acres are used for ornamental stock, containing over 75,000 trees. Besides this there



VIEW OF RICHLAND NURSERY, RICHLAND WASHINGTON

are 15,000 roses propagated from soft wood cuttings, which will be used for mail orders, and also for lining out in the nursery, besides thousands of flowering shrubs and vines. The nursery itself is ideally situated on irrigated land just on the outskirts of the town of Richland, with a complete business

office under the efficient general management of Mr. C. F. Breithaupt. Professor W. J. Vander Bruggen has charge of all the ornamentals and all propagating work. He is a graduate horticulturist from Holland and for the past three years has held a position as foreman with some of the leading nurserymen and greenhouse firms of the East. J. C. Breithaupt and W. J. Breithaupt have charge of the budding, grafting, planting and care of all fruit stock. Send for a copy of the Richland Nursery Company's catalogue, containing forty-six pages. It is a most complete and comprehensive manual, prepared and edited by the various heads of the nursery departments. *

VEHICLES AND AGRICULTURAL IMPLEMENTS

THE BEST OF
ORCHARD AND GARDEN TOOLS
A SPECIALTY

**GILBERT - VAUGHAN
IMPLEMENT CO.**
HOOD RIVER, OREGON

THINGS WE ARE AGENTS FOR

KNOX HATS
ALFRED BENJAMIN & CO.'S
CLOTHING
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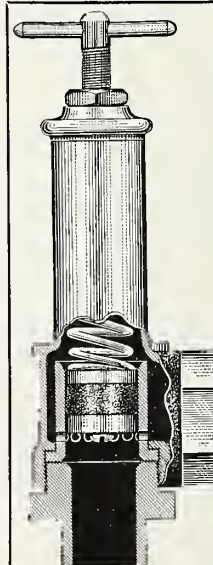
Drain Tile

Most Important Investment
for the tiller of the soil

Write for prices and free booklet

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601 Beck Building
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THE NEW CROWN RELIEF VALVE

For Power Sprayers
Patent Applied For

An end to Relief Valve
Troubles

Designed on an
entirely new principle
and sold under
guarantee

SPECIAL PRICE FOR
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\$4.00 POST
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**CROWN SPECIALTY
COMPANY**

BOX 297, CHICAGO

IF YOU WANT THE BEST ORCHARD LAND IN OREGON

I have what you want, whether it is five to forty acres for a HOME ORCHARD, or 400 acres for subdivision.

I have land in the Hood River Valley or in the Mount Hood Valley adjoining Dufur.

If you do not want to take possession at once, your land will be planted and cared for, in the best manner, for you for from three to five years, when it will come into bearing.

For further particulars address,

P. O. BOX 86, HOOD RIVER, OREGON

Prizes for Your Products

ENTER SOME EXHIBITS OF *YOUR* HANDIWORK AT THE

American Land & Irrigation Exposition: Nov. 3 to 12, 1911 Madison Square Garden, New York City

A rare opportunity for the Farmers and Fruit-growers of the Northwest to show the world where the *Real Goods* come from!

Note the List of Prizes:

For Best 25 boxes of Apples, any varieties.....	\$ 500 in Gold
For Best 100 pounds Wheat grown in U. S.	1,000 Gold Cup
For Best 100 pounds Wheat grown in No. & So. America	1,000 in Gold
For Best 30 ears of Corn grown in U. S.	1,000 Cup
For Best 100 pounds White Oats grown in U. S.	1,000 Cup
For Best Alfalfa Exhibit.....	1,000 Cup
For Best Half Bushel Potatoes grown in U. S.	1,000 Cup
For Best Sugar Beets grown in U. S.	1,000 Cup
For Best Hops grown in U. S.	1,000 Cup
For Best Bushel Barley grown in U. S.	1,500 Cup

Write quickly for circular giving detailed information about this Exposition and the numerous prizes offered for displays of farm products and your opportunity to get 160 acres of Montana land to be awarded by popular allotment by the

Northern Pacific Ry.

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NURSERY CATALOG

New, handsome, instructive, up-to-date, describing

Fruit and Ornamental Trees, Shrubs, Vines, Roses, Berry Plants, etc.

Free on request. Write now, mentioning this paper.

J. B. PILKINGTON, Nurseryman, Portland, Oregon

TERMINAL ICE AND COLD STORAGE CO.

A COLD STORAGE PLANT, MODERN THROUGHOUT, AT
THIRD AND HOYT STREETS, PORTLAND, OREGON

Fruit growers or apple growers and dealers of the Western markets in and around Portland, who have watched the markets closely for the past few years, have learned that in the spring there is always a good demand for apples, and that they usually bring good prices if they are in good condition. There is only one way to keep them in good condition for spring consumption, and that is to put them in cold storage.

We offer the best of cold storage facilities in the city of Portland and solicit correspondence from all the associations and fruit growers in general who want to store fruit in the fall or early winter to be used in the spring.

Write us and we will give you further particulars.

TERMINAL ICE AND COLD STORAGE CO.

THIRD AND HOYT STREETS, PORTLAND, OREGON

RICHLAND NURSERY CO.



INSURE YOUR HARVEST

by planting in the first place GOOD ROOTS. If you are looking for choice home-grown, hardy trees and plants especially adapted to the Pacific Northwest send for

OUR 46-PAGE CATALOG

We make a specialty of perfectly rooted nursery stock, and every tree we ship to you is guaranteed by us to be true to name. We sell every variety of fruit and ornamental trees, berry plants, shrubs, vines, perennial plants, roses, etc., wholesale and retail.

RICHLAND NURSERY CO., INC.
Breithaupt Brothers & James
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RICHLAND, WASH

GET CATALOG AND PRICE LIST

420 Acres Devoted to Nursery Purposes

THE WOODBURN NURSERIES

Established 1863 by J. H. Settlemier

Grower of Choice

NURSERY STOCK

F. W. SETTLEMIER

Woodburn, Oregon

Make Big Money Drilling Wells



IMPROVED STANDARD DRILLING MACHINE
One Man Can Handle
Has a record of drilling 130 feet and driving casing in one day. Only three levers. Extra large rope sheaves. Positively will drill every

kind of formation. Avoid delays from sending back East. Buy from us. We build these up-to-date machines. Will tell you all in catalog. Write for it.
REIERSON MACHINERY CO., MANFRS., PORTLAND, OREGON

APPLES!

We want the best the market provides

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Let us keep you posted on the St. Paul market
It will pay you

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NORTHWEST CORNER OF DAVIS AND WASHINGTON STREETS

SAN FRANCISCO, CALIFORNIA

The largest dealers in and distributors of Box Apples on the Pacific Coast

Get in touch with us. Let us know what you have to dispose of. Best modern cold storage facilities

Inquire about us of any bank, mercantile agency, Produce Reporter Company, or the manager of your association

LET US HEAR FROM YOU

S. SEGARI & COMPANY

No. 109 Poydras Street
New Orleans, Louisiana

Next door to the auction room, will be our headquarters for California deciduous fruits and box apples. Remember, we keep experienced salesmen at the Illinois Central Railroad fruit and produce sheds, also at the Louisville and Nashville Railroad watermelon and produce sheds. We are now ready to handle

Apples, Pears, Cantaloupes, Peaches

WRITE OR WIRE WHAT YOU HAVE

NEW ORLEANS

GEO. H. APPEL

The Acknowledged
FANCY FRUIT HOUSE
of New Orleans

IMPORTERS
JOBBER

Wholesale
Commission

LAUX & APPEL

All Fruits in Season

Storage for 50 Cars

THE HOUSE
YOU WANT

LINDSAY & CO. LTD. Wholesale Fruits

HELENA, MONTANA

Established in Helena Quarter of a Century

Branch houses: Great Falls, Missoula and Billings, Montana

J. L. BEER & CO.

Fruit and Produce

306-310 Poydras and 507-509 South Peters, NEW ORLEANS

Box Apples

Peaches, Pears and Cantaloupes

We are distributors. We reach all points tributary to New Orleans, including Cuba, Panama and Central America

SOUTHERN OREGON NURSERIES

YONCALLA, OREGON

No Agents

Prices Wholesale

GENERAL NURSERY STOCK PROPAGATORS

Stock clean and true. Budded or grafted from bearing trees

E. P. DREW

Consulting Horticulturist

30 years in business



WHITE LEAD
on THE FARM
Run Down Places

Don't let your buildings run down—any more than your land—both of them are your capital. Nothing makes a farm appear more neglected and down-at-the-heel than unpainted buildings. Paint mixed on the job and made of

"Dutch Boy Painter"
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and pure linseed oil will not only make your buildings look prosperous but will protect them from the weather as no other paint can. It is the most economical paint in the world because it lasts so long. Paint now and keep out the winter's storms and frosts.

Our Free Painting Helps
We will send you free, on request, color schemes and miscellaneous painting instructions that you will find of real practical value. Ask for Helps 739

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New York Cleveland Chicago St. Louis
Boston Buffalo Cincinnati San Francisco
(John T. Lewis & Bros. Co., Philadelphia)
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"PEDIGREED DOGS WITH BRAINS"



One of the finest litters of Airedale Terriers ever bred on the Pacific Coast is now ready for delivery. Sired by "Kootenai Admiral" ex "Clipstone Sunbeam," whelped May 20. The Airedale is the most useful dog living and the ideal dog for the country home. Males \$25.00, females \$20.00. I refund your money if you are not satisfied. C. W. J. RECKERS, Klickitat Kennels, On the Bluff White Salmon, Washington

Trees and Seeds That Grow

26th Year.

For 26 years I have furnished my customers with trees and seeds direct, without any middleman, at less than half the agents' price. Freight paid on \$10.00 tree orders.

Grafted Apple and Peach, 2-3 feet, 1 year from bud, 7c each. Cherry, 15c each. Full assortment of Vegetable, Flower and Farm Seeds. Save money; send for my large illustrated Garden Book. Free.

GERMAN NURSERIES AND SEED HOUSE
(Carl Sonderegger) Beatrice, Neb.

HARVEY BOLSTER SPRINGS

Soon save their cost. Make every wagon a spring wagon, therefore fruit, vegetables, eggs, etc., bring more money. Ask for special proposition. Harvey Spring Co., 784 17th St., Racine, Wis.



Apple Tree Gavel Presented to Mr. W. L. Wagner

At Niagara Falls in August, 1910, Mr. L. K. Sutton of Columbus approached your secretary and suggested that a gavel be presented to Mr. Wagner at the Detroit convention, and during all of the succeeding time he has followed it with keen interest and valuable assistance. It was deemed especially appropriate to procure a gavel of apple wood if possible. To that end the great sections of the United States and Canada were called upon. In the end the Spitzenberg was procured from E. H. Shepard of Hood River, Oregon, the Spy from Mr. Peterson of Canada, the Greening from Mr. Blodgett of Massachusetts, the Baldwin from New York, the Albemarle Pippin from S. L. Lupton and F. D. Wood of Virginia and the Ben Davis from Missouri by Mr. Sutton. These woods were put together, the Baldwin composing the handle and the other five in the head. At the forefront of the head was the Greening carved in the form of a matured apple. On each of the other sections of the head apple

blossoms were carved, and the names of the states from which the wood came were also carved upon the respective pieces. Running entirely around each end of the head were carved wreaths of apple leaves. About the handle was a silver band, and engraved thereon were the words, "William L. Wagner, Detroit, 1911."

In connection with the gavel a framed scroll, done in gold and white, was presented. On the scroll were these words: "The Apple Tree Gavel, presented to William L. Wagner, four times president of the International Apple Shippers' Association, by the members thereof, in grateful appreciation of his services; courage, energy, fidelity, wisdom and truth—he brought things to pass." Mr. Wagner's work will long be remembered in its vital force and energy. He was a builder, a creator, a man of truth and judgment and a friend unrivaled. No more need be said of any man.—From the Spy, published by the International Apple Shippers' Association, Rochester, New York, August 24, 1911.

For Several Years

We have been supplying most of the nursery stock planted in the famous Wenatchee district. Our business has grown to one of the largest in the Northwest and we have gained a reputation of which we are proud.

EXPERIENCE HAS TAUGHT US HOW TO GROW THE

Cleanest, Healthiest, Best-Rooted Trees in the World

Our line is large and complete. Over two million trees sold last year.

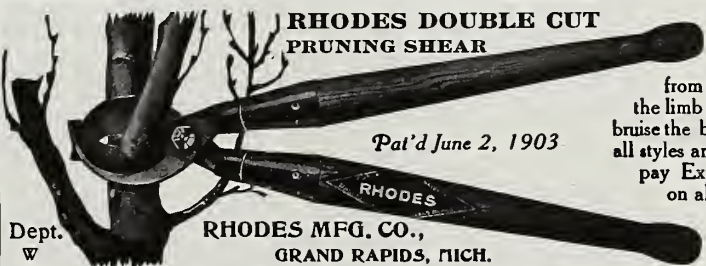
Our customers get what they order.

Send in your list, whether large or small.

Columbia and Okanogan Nursery Company

WHOLESALE AND RETAIL

WENATCHEE, WASHINGTON

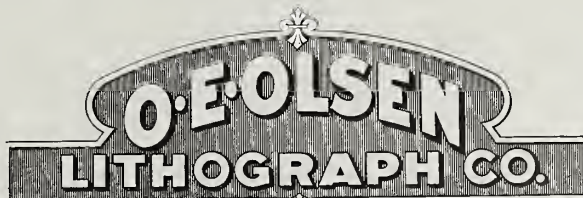


RHODES DOUBLE CUT PRUNING SHEAR

Pat'd June 2, 1903

Dept. W RHODES MFG. CO., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.



FRUIT LABELS

FOR BOXES, CANS, BOTTLES, ETC.

STOCK AND SPECIAL TRADE MARK DESIGNS
330 JACKSON ST. SAN FRANCISCO.
COR. BATTERY ST.

STEINHARDT & KELLY

101 PARK PLACE, NEW YORK

THE MOST EXTENSIVE OPERATORS IN
HIGH CLASS FRUITS IN THE WORLD

THE Messrs. Steinhardt & Kelly take great pleasure in advising the fruit growers of the Northwest that a member of the firm will as usual make his annual trip to the Coast sometime during the latter part of August and the early part of September, for the purpose of acquiring, both by the outright purchase or such other method as agreeable to the growers, the large amount of reserve stock in all varieties of fruit which their business demands. Particularly do the Messrs. Steinhardt & Kelly wish to draw the attention of the growers to their practically unlimited outlet for fancy fruit and to their sincere belief in their ability to handle and dispose of the crops of the most extensive districts at prevailing market rates with celerity and dispatch. ¶ The Messrs. Steinhardt & Kelly might also incidentally mention that they have completed arrangements giving them cold storage space for several hundred carloads in the very best cold storage warehouses in the East and Middle West. ¶ All correspondence will get the prompt personal attention of a member of the firm



Cable Address: Bilberries

A. B. C. Code, 5th Edition

H. OLFF & SOHN

HAMBURG, GERMANY

Fruit Merchants and
Commission Agents

SPECIALTIES:

American Apples

AND

West Indian Bananas

Our new office building, as shown by the picture on the side, is located right opposite the new Central Fruit and Vegetable Market and equipped with all modern accommodations.

WE WANT TO TALK BUSINESS

WITH EVERY SHIPPER OF

APPLES

PEACHES

PEARS

IN

California, Oregon, Washington, Idaho, Colorado, Utah, Nevada

WRITE US TO-DAY, stating varieties, quantity and probable quality of fruit you expect to ship. Look up our standing; ask "Better Fruit" or your bank

Robt. T. Cochran & Co. 290 Washington Street
NEW YORK



THE CUTAWAY HARROW AT WORK

Intensive Cultivation with the Cutaway Harrow

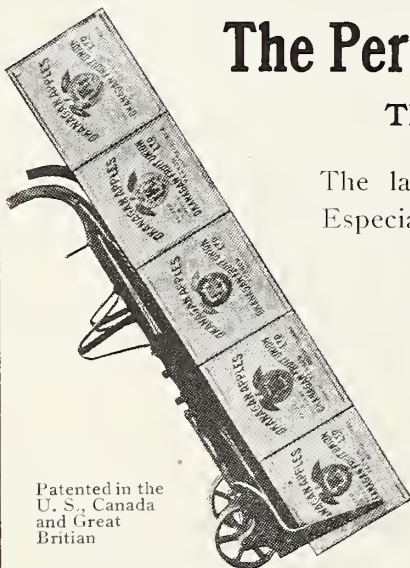
IN the vicinity of Tariffville, Connecticut, are fields aggregating about seven hundred acres, upon which are grown large quantities of Sumatra tobacco, most of which is cultivated under cloth. Posts several feet above the ground are planted at regular distances, wires are stretched tightly, then the muslin strips are stretched above the wires and tied, thus making a roof.

In hot weather horses and men easily fatigue under this canvas, therefore some method of easier and cheaper cultivation was greatly needed. Finally it was decided to try a twenty horse-power gasoline engine and a double-action "Cutaway" harrow. This combination proved a great success. The outfit takes the place of six eight-

foot harrows, six men and twenty-four horses. A saving of twenty-five to thirty dollars a day and no horses to feed during the winter months.

This outfit can be run day and night, with change of crews. The engine is easy to guide; simply set the lever, adjust the elevis and the harrow requires no more attention. It is not necessary for the man to ride on the harrow. Engine and harrow turn in circle of sixty-four feet. The harrow works as deep as necessary, taking the place of plows and pulverizes the earth thoroughly.

The harrow was made by the Cutaway Harrow Co., Higganum, Connecticut, who will give full information on application. Ask for free booklet, "Intensive Cultivation."



The Perfection Clamp Truck

THE LABOR SAVER

The latest and best truck on the market. Especially designed for handling case and crate goods of all kinds. Fruit Associations, Jobbers, Cold Storage Houses, Railroads and Express Companies. We are prepared to fill orders on short notice. Write for prices and circulars.

PERFECTION TRUCK CO.
NORTH YAKIMA, WASHINGTON

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U. S., Canada
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Britain

Buy and Try

White River Flour

Makes
Whiter, Lighter
Bread

CREST SPRAY



A Heavy Miscible Oil
for Orchards and
Gardens

An Effective
EXTERMINATOR
of all Insect Life,
Germs and Vermin

We Guarantee
Results

CREST SPRAY is the result of scientific and practical experiments by the best phytopathologists and chemists.

Analysis: Tar and kindred products, Nauththal, Pyroligneous Acid, Douglas Fir Oil, Phenols, Creosote, Turpentine, Resin, Sulphur and Soda.

DIFFERS FROM OTHER SPRAYS

Crest Spray is a soluble or miscible oil and mixes readily with water. It remains in solution, forming an emulsion. It is non-poisonous and harmless to operator. It requires no boiling or preparation like the Lime-Sulphur. Its use is a saving of time and money. Home-made Lime-Sulphur costs from 1½ to 2 cents per gallon. Crest Spray costs from 1½ to 3 cents per gallon. A gallon of Crest Spray has a covering power almost twice as great as Lime-Sulphur, reducing the most nearly one-half.

Scientific, Effective, Convenient, Economical

Barrels, 25 or 50 gallons, per gallon	\$1.25
Five-gallon cans, per gallon	1.35
One-gallon cans, per gallon	1.50
Half-gallon cans, each	.90
Quart cans, each	.50
Pint cans, each	.30

Testimonials sent on application

CREST CHEMICAL CO.

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FREE THIS ALADDIN LAMP FREE
BURNS KEROSENE (Coal Oil)

Outshines city gas or electricity. Simple, noiseless, odorless, clean, safe, money-saving. Guaranteed. Write nearest office for catalogue M and learn how to get an Aladdin Mantle Lamp FREE.

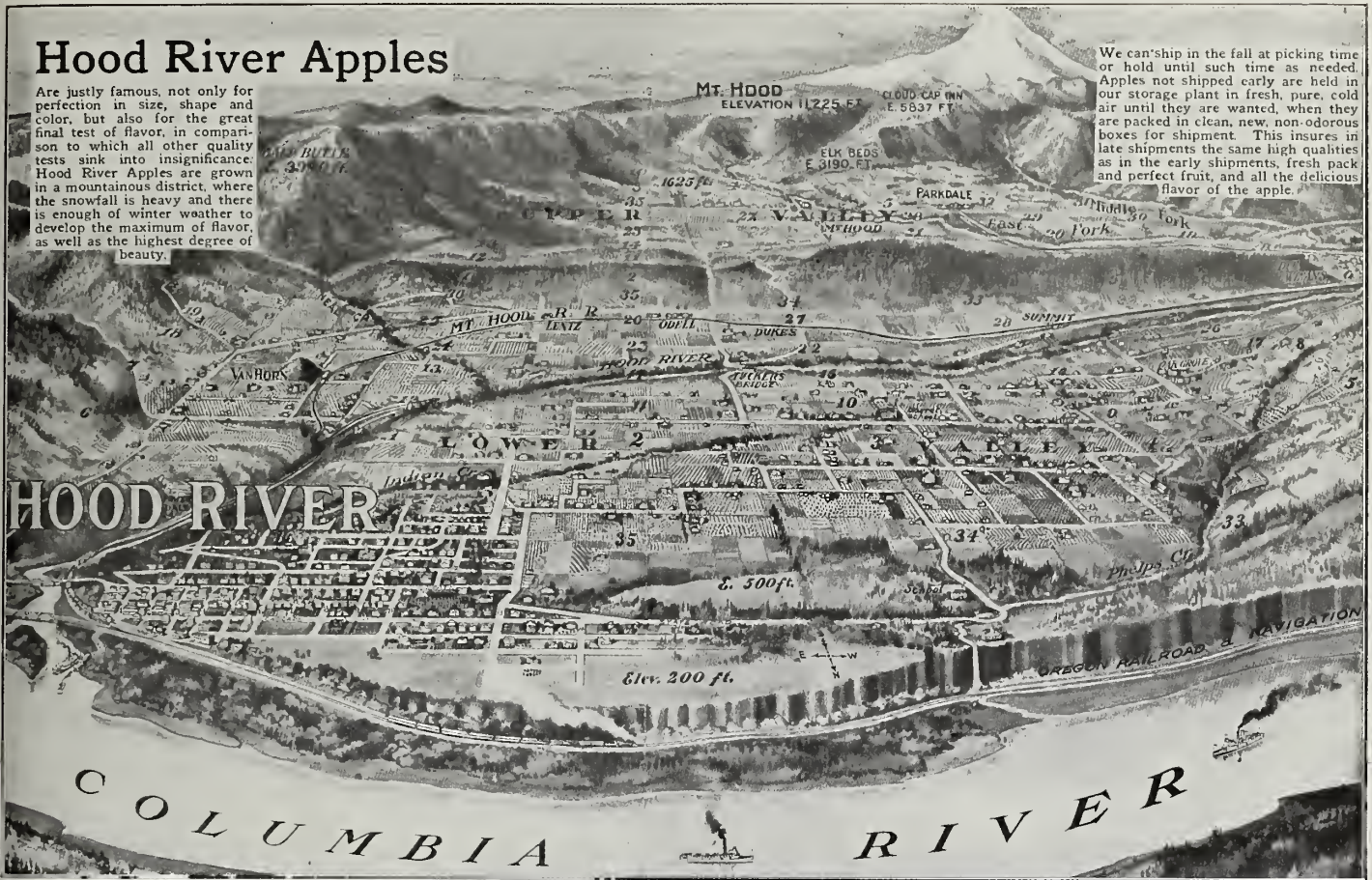
AGENTS T. H. BALL SOLD 850 on money back guarantee, not one returned. Stacey sold 12 in one hour. Newsom sold 12 in 10 calls. Gitson sold 48 in 5 days. Sells itself. Needed in every home. Our Sunbeam Burner fits all other lamps. Complete line for homes, stores, etc. Ask for our liberal agency proposition.

MANTLE LAMP CO. OF AMERICA, Dept. 863
Portland, Oregon Chicago, Illinois

Hood River Apples

Are justly famous, not only for perfection in size, shape and color, but also for the great final test of flavor, in comparison to which all other quality tests sink into insignificance. Hood River Apples are grown in a mountainous district, where the snowfall is heavy and there is enough of winter weather to develop the maximum of flavor, as well as the highest degree of beauty.

We can ship in the fall at picking time or hold until such time as needed. Apples not shipped early are held in our storage plant in fresh, pure, cold air until they are wanted, when they are packed in clean, new, non-odorous boxes for shipment. This insures in late shipments the same high qualities as in the early shipments, fresh pack and perfect fruit, and all the delicious flavor of the apple.



Will make early quotations on carloads and solicit your business

DAVIDSON FRUIT CO. Hood River, Oregon

SAWYER & DAY Wholesale Dealers and Jobbers of FOREIGN & DOMESTIC FRUITS

2 NORTH MARKET STREET AND 33 COMMERCIAL STREET, BOSTON, MASSACHUSETTS

We desire to get in touch with the best apple growers associations and private shippers in the Northwest. We are familiar with the quality and grade of Western box apples and we have an extensive acquaintance with the trade throughout New England that are looking for fancy boxed apples. Therefore we feel confident that we can assure splendid returns on all fruits that may be consigned to us, and consequently we feel justified in asking for your trade, and in order to get better acquainted with the fruit shippers when the apple season is on, we solicit correspondence in advance.

Our reference—Faneuil Hall Branch of the Beacon Trust Company, Boston, Massachusetts.

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MAKE US LEADERS

FRANK W. STANTON & CO.

Can furnish reference from ocean to ocean

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Improved for 1911

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Loganberry Plants

All Tips

\$20.00 per M.

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BROOKS, OREGON

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JOBBER OF

Fruits and Vegetables, and
Apple Packers

Largest Strawberry Dealers
in the West

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Strawberries and Apples Our
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A strong house—Pioneer dealer of
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"BEAUTIFUL OZARKS"
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cheap and on easy terms. Located in Stone
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All Grades of

BOX APPLES

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THE CHERRY CITY NURSERIES

Claim their trees are the best, their
prices right, and solicit your patronage
for their fine line of

Apple, Pear, Peach, Prune
and Plum Trees

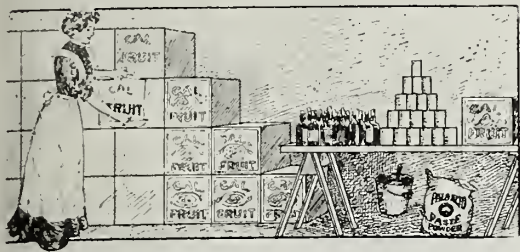
and small fruits. Also ornamental trees
and shrubs. Special attention given to
roses. Send for catalogue and price list.

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A few years ago the N. Y. Experiment Station started out to prove that "Scalecide" was too expensive, but they found that in orchard work 9 gals. of "Scalecide" went as far as 17 gals. of Lime-Sulfur. This being the case, a barrel of "Scalecide" which makes 800 gals. of spray at the strongest strength, will go as far and do better work than 1500 gals. of Lime-Sulfur spray, which will require $3\frac{1}{2}$ barrels of the best Lime-Sulfur. The Missouri Experiment Station reports that "Scalecide" killed 100% of scale in 5 out of 7 tests. Lime Sulfur did not do it once in 10 tests in the same orchard. "Scalecide" has greater fungicidal properties than Lime-Sulfur as a Winter wash. A postal request to Dept. "D" will bring by return mail, free, our book, "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "Scalecide—the Tree-Saver." If your dealer cannot supply you with "Scalecide," we will deliver it to any R. R. Station in the U. S. east of the Mississippi and north of the Ohio Rivers on receipt of price, 50-gal. bbls., \$25.00; 30-gal. bbls., \$16.00; 10-gal. cans, \$6.75; 5-gal. cans, \$3.75. Address, B. G. Pratt Company, 50 Church Street, New York City.

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Paste Specialists

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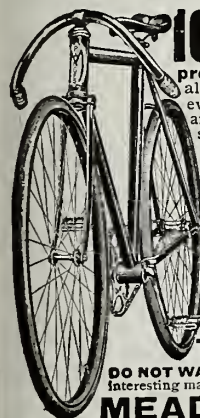
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LOW FACTORY PRICES We sell the highest grade bicycles direct from factory to rider at lower prices than any other house. We save you \$10 to \$25 middlemen's profit on every bicycle. Highest grade models with Puncture-Proof tires, Imported Roller chains, pedals, etc., at prices no higher than cheap mail order bicycles; also reliable medium grade models at unheard of low prices.

RIDER AGENTS WANTED in each town and district to ride and exhibit a sample 1912 "Ranger" Bicycle furnished by us. You will be astonished at the wonderfully low prices and the liberal propositions and special offer we will give on the first 10% sample going to your town. Write at once for our special offer.

DO NOT BUY a bicycle or a pair of tires from anyone at any price until you receive our catalogue and learn our low prices and liberal terms. **BICYCLE DEALERS**, you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

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TIRES, COASTER BRAKE and everything in the bicycle line at half usual prices. rear wheels, innertubes, lamps, cyclometers, parts, repairs and everything in the bicycle line at half usual prices. Interesting matter and useful information. It only costs a postal to get everything. Write it now.

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High Heat Combined with High Moisture Kills the Hatch.
Low Heat with Low Moisture is Equally Fatal.

The Relation of Heat to Moisture is a Wonderful Discovery and the New 1912 "Mandy Lee" is the only incubator providing for their control, by a simple, automatic device that takes care of itself day or night.

Do You Realize that the exclusive features of the "Mandy Lee" Incubator, together with the Lee system of direct contact heat in brooding, are the results of original research and are covered by over 30 patents, and that to Mr. Lee belongs the credit for the discovery and demonstration of these fundamental principles of incubation.

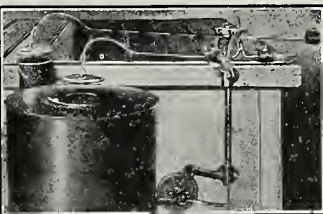
Knowing these Facts—you would not be satisfied with any other incubator and sooner or later you will order a "Mandy Lee."

Better do it now and get a right start.

A good incubator of ample capacity is a safe investment. Low-priced, inferior machines are always disappointing and discouraging. Your incubator is of first importance and should be one that can be depended upon.

Two factories running day and night could not supply the demand for 1911 "Mandy Lees"—hence this early announcement. Order now for later delivery and save disappointment. Our Complete Catalogue of Poultry Supplies and booklets on the care and feeding of poultry, their diseases and treatments, sent free upon request. Ask for catalog No. 202

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With this system you generate electric current by the means of a small gasoline engine driving a dynamo or generator at any convenient time. The current is run into a storage battery so you can have light anytime by turning on a switch. Charging of the storage battery is done once or twice a week, or whenever the engine is being run for other work.

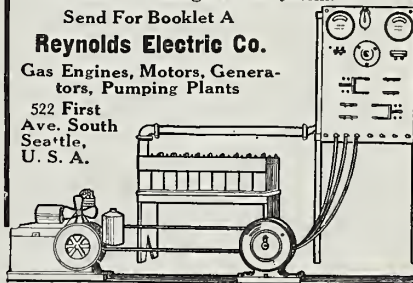
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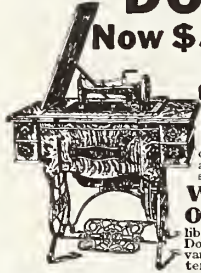
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We grow exclusively, and offer to planters, selected trees of certified pedigree.

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J. M. SCHMELTZER, Secretary

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THE TOOL that SAVES a TOOL

What Prof. Bailey Says

"The Double Action 'Cutaway' Harrow has been satisfactory. I use it almost continuously on our hard clay land with good results."

are used and endorsed by satisfied users throughout this entire country. Also in several foreign countries. Why? Because they decrease labor and increase crops.

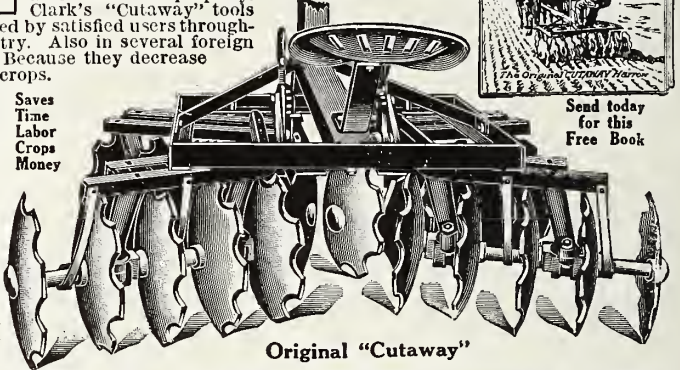
Our disks are made of cutlery steel shaped and sharpened in our own shops and are the only genuine "Cutaway" disks.

Beware of imitations and infringements. We make A tool for every crop. If your dealer can't supply the genuine "Cutaway," write us your needs. Satisfaction guaranteed. Prompt shipments. Send a postal today for our new catalogue. "Intensive Cultivation." It's Free.

Why buy two tools when one will do two kinds of work and do it better and easier? Clark's original "Cutaway" Harrow can be used as a field harrow and its extension head frame converts it into an orchard harrow. Drawn by two medium horses and will cut 28 to 30 acres or double cut 15 acres in a day. The genuine "Cutaway" disk slices, stirs, lifts, twists and aerates the soil. Working the soil this way lets in the air, sunshine and new life and kills foul vegetation. Thorough cultivation makes large crops. Successful farmers, orchardists, gardeners and planters know that intensive cultivation is profitable when done properly.

Clark's "Cutaway" tools are used and endorsed by satisfied users throughout this entire country. Also in several foreign countries. Why? Because they decrease labor and increase crops.

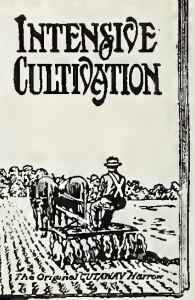
Saves
Time
Labor
Crops
Money



Original "Cutaway"

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Mitchell, Lewis & Staver Co., Western Agents, Portland, Oregon



Send today for this Free Book

NORTHWEST GROWERS' UNIONS AND ASSOCIATIONS

WE publish free in this column the name of any fruit growers' organization. Secretaries are requested to furnish particulars for publication.

Oregon

Eugene Fruit Growers' Association, Eugene; Ashland Fruit and Produce Association, Ashland; Hood River Fruit Growers' Union, Hood River; Hood River Apple Growers' Union, Hood River; Grand Ronde Valley Fruit Growers' Union, La Grande; Milton Fruit Growers' Union, Milton; Douglas County Fruit Growers' Association, Roseburg; Willamette Valley Prune Association, Salem; Mosier Fruit Growers' Association, Mosier; The Dalles Fruit Growers' Union, The Dalles; Salem Fruit Union, Salem; Albany Fruit Growers' Union, Albany; Coos Bay Fruit Growers' Association, Marshfield; Estacada Fruit Growers' Association, Estacada; Umpqua Valley Fruit Growers' Association, Roseburg; Hyland Fruit Growers of Yamhill County, Sheridan; Newburg Apple Growers' Association, Newburg; Dufur Valley Fruit Growers' Union, Dufur; McMinnville Fruit Growers' Association, McMinnville; Coquille Valley Fruit Growers' Union, Myrtle Point; Stanfield Fruit Growers' Association, Stanfield; Oregon City Fruit and Produce Association, Oregon City; Lincoln County Fruit Growers' Union, Toledo; Rogue River Fruit and Produce Association, Medford; Mount Hood Fruit Growers' Association, Sandy; Northeast Gaston Farmers' Association, Forest Grove; Dallas Fruit Growers' Association, Dallas; Northwest Fruit Exchange, Portland; Springbrook Fruit Growers' Union, Springbrook; Cove Fruit Growers' Association, Cove; Santiam Fruit Growers' Association, Lebanon; Washington County Fruit Growers' Association, Hillsboro; Benton County Fruit Growers' Association, Corvallis; Sutherlin Fruit Growers' Association, Sutherlin.

Washington

Kennewick Fruit Growers' Association, Kennewick; Wenatchee Fruit Growers' Union, Wenatchee; Puyallup and Sumner Fruit Growers' Association, Puyallup; Vashon Island Fruit Growers' Association, Vashon; Mt. Vernon Fruit Growers' Association, Mt. Vernon; White Salmon Fruit Growers' Union, White Salmon; Thurston County Fruit Growers' Union, Tumwater; Bay Island Fruit Growers' Association, Tacoma; Yakima Valley Fruit and Produce Growers' Association, Granger; Buckley Fruit Growers' Association, Buckley; Lewis River Fruit Growers' Union, Woodland; Yakima County Horticultural Union, North Yakima; White River Valley Fruit and Berry Growers' Association, Kent; Lake Chelan Fruit Growers' Association, Chelan; Zillah Fruit Growers' Association, Toppenish; Kiona Fruit Growers' Union, Kiona; Mason County Fruit Growers' Association, Shelton; Clarks-

ton Fruit Growers' Association, Clarkston; Walla Walla Fruit and Vegetable Union, Walla Walla; The Ridgefield Fruit Growers' Association, Ridgefield; Felida Prune Growers' Association, Vancouver; Grandview Fruit Growers' Association, Grandview; Yakima Valley Fruit Growers' Association, North Yakima; Southwest Washington Fruit Growers' Association, Chehalis; The Touchet Valley Fruit and Produce Union, Dayton; Lewis County Fruit Growers' Association, Centralia; The Green Bluffs Fruit Growers' Association, Mead; Garfield Fruit Growers' Union, Garfield; Goldendale Fruit and Produce Association, Goldendale; Spokane Inland Fruit Growers' Association, Kelso; Elma Fruit and Produce Association, Elma; Granger Fruit Growers' Association, Granger; Cashmere Fruit Growers' Union, Cashmere; Stevens County Fruit Growers' Union, Myers Falls; Dryden Fruit Growers' Union, Dryden; White Salmon Valley Apple Growers' Union, Underwood.

Idaho

Southern Idaho Fruit Shippers' Association, Boise; New Plymouth Fruit Growers' Association, New Plymouth; Payette Valley Apple Growers' Union, Payette; Parma-Roswell Fruit Growers' Association, Parma; Weiser Fruit and Produce Growers' Association, Weiser; Council Valley Fruit Growers' Association, Council; Nampa Fruit Growers' Association, Nampa; Lewiston Orchard Producers' Association, Lewiston; Boise Valley Fruit Growers' Association, Boise; Caldwell Fruit Growers' Association, Caldwell; Emmett Fruit Growers' Association, Emmett; Twin Falls Fruit Growers' Association, Twin Falls; Weiser River Fruit Growers' Association, Weiser; Fruit Growers' Association, Moscow.

Colorado

San Juan Fruit and Produce Growers' Association, Durango; Fremont County Fruit Growers' Association, Canon City; Rocky Ford Melon Growers' Association, Rocky Ford; Plateau and Debeque Fruit, Honey and Produce Association, Debeque; The Producers' Association, Debeque; Surface Creek Fruit Growers' Association, Austin; Longmont Produce Exchange, Longmont; Manzanola Fruit Association, Manzanola; Delta County Fruit Growers' Association, Delta; Boulder County Fruit Growers' Association, Boulder; Fort Collins Beet Growers' Association, Fort Collins; La Junta Melon and Produce Company, La Junta; Rifle Fruit and Produce Association, Rifle; North Fork Fruit Growers' Association, Paonia; Fruita Fruit and Produce Association, Fruita; Grand Junction Fruit Growers' Association, Clifton; Palisade, Grand Junction; Palisade Fruit Growers' Association, Palisade; Peach Growers' Association, Palisade; Colorado Fruit and Commercial Company, Grand Junction; Montrose Fruit and Produce Association, Montrose; Hotchkiss

Fruit Growers' Association, Hotchkiss; Paonia Fruit Exchange, Paonia; Colorado Fruit Growers' Association, Delta; Crawford Fruit Growers' Association, Crawford; Amity Cantaloupe Growers' Association, Amity; Pent County Melon Growers' Association, Las Animas; Capitol Hill Melon Growers' Association, Rocky Ford; Denver Fruit and Vegetable Association, Denver; Fair Mount Melon Growers' Association, Swink; Fowler Melon Growers' Association, Fowler; Granada Melon Growers' Association, Granada; Grand Valley Fruit and Produce Association, Grand Junction; Independent Fruit Growers' Association, Grand Junction; Koms Party Cantaloupe Growers' Association, Rocky Ford; Lamar Melon Growers' Association, Lamar; Loveland Fruit Growers' Association, Loveland; Manzanola Orchard Association, Manzanola; Newdale Melon Growers' Association, Swink; Roaring Fork Potato Growers' Association, Carbonade; Woods Melon Growers' Association, Las Animas.

Montana

Bitter Root Fruit Growers' Association, Hamilton; Missoula Fruit and Produce Association, Missoula.

Utah

Farmers and Fruit Growers' Forwarding Association, Centerville; Ogden Fruit Growers' Association, Ogden; Brigham City Fruit Growers' Association, Brigham City; Utah County Fruit and Produce Association, Provo; Willard Fruit Growers' Association, Willard; Excelsior Fruit and Produce Association, Clearfield (Post-office Layton R. F. D.); Centerville Fruit Growers' Association, Centerville; Bear River Valley Fruit Growers' Association, Bear River City; Springville Fruit Growers' Association, Springville; Cache Valley Fruit Growers' Association, Wells; Green River Fruit Growers' Association, Green River.

New Mexico

San Juan Fruit and Produce Association, Farmington.

British Columbia

British Columbia Fruit Growers' Association, Victoria; Victoria Fruit Growers' Exchange, Victoria; Hammond Fruit Growers' Union, Hammond; Hatzie Fruit Growers' Association, Hatzie; Western Fruit Growers' Association, Mission; Mission Fruit Growers' Association, Mission; Salmon Arm Farmers' Exchange, Salmon Arm; Armstrong Fruit Growers' Association, Armstrong; Okanagan Fruit Union, Limited, Vernon; Kelowna Farmers' Exchange, Limited, Kelowna; Summerland Fruit Growers' Association, Summerland; Kootenay Fruit Growers' Union, Limited, Nelson; Grand Forks Fruit Growers' Association, Grand Forks; Boswell-Kootenay Lake Union, Boswell; Queens Bay Fruit Growers' Association, Queens Bay; Kaslo Horticultural Association, Kaslo; Creston Fruit and Produce Exchange, Creston.

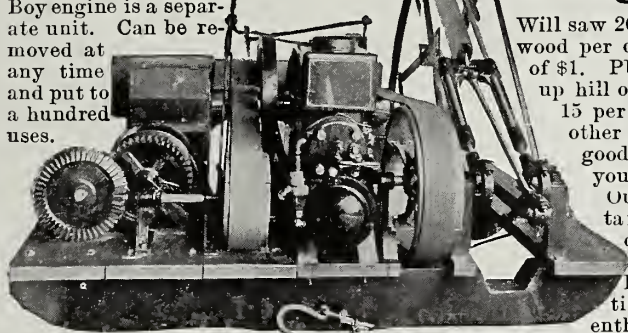
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Will Pay for Itself in Less Than Three Weeks. Operated by One Man.

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The 4 h. p. Waterloo Boy engine is a separate unit. Can be removed at any time and put to a hundred uses.

"King of the Woods" Drag Saw



Will saw 20 to 40 cords of wood per day at a cost of \$1. PULLS ITSELF up hill or down. Costs 15 per cent less than other makes not as good. There's more you ought to know. Our catalog contains complete description and prices; sent FREE with testimonials from enthusiastic users.

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Poultry Supplies, Spray, Spray Materials, Fruit Trees, Etc.

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One hundred and twenty acres of high grade apple land in Shenandoah Valley for \$2,000.00 to insure quick sale; within two miles of the largest apple shipping station in Virginia and no better land for apples in the state; well watered by springs and streams and partly cleared. Easily worth double the price asked. Other lands in large and small tracts at \$15.00 to \$50.00 per acre.

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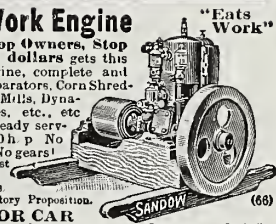
F. H. LaBAUME, Agricultural Agent
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Let SANDOW Run It!

Wonderful Work Engine

"Eats Work"
Farmers and Shop Owners, Stop Sweating! A few dollars gets this grand little work engine, complete and ready to run Cream Separators, Corn Shreders, Grist Mills, Feed Mills, Dynamos, Printing Presses, etc., etc. Gives a lifetime of steady service! All Sizes: 2 to 20 h. p. No cranking! No cams! No gears! Only 3 moving parts. Finest construction. Thousands in use. Guaranteed 5 years. Write for Special Introductory Proposition.
DETROIT MOTOR CAR SUPPLY CO., 238 Canton Ave., Detroit, Mich.



WE MAKE 200 DIFFERENT SIZES.
SUITABLE FOR EVERY PURPOSE

Pearson Coated Nails

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RECOGNIZED STANDARD

Fruit Box Nails

To insure always getting

Best Quality,
Proper Size, and
Full Count Nails

specify PEARSON, and take no substitute.

Why not accept this advice when PEARSON'S cost no more?

J. C. Pearson Co.

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Superior facilities for handling

PEACHES
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Solicit Your Consignments

Reliable Market Reports Prompt Cash Returns

A Reputation to Sustain

Vineland Nurseries Company

Clarkston, Washington

PROPAGATORS OF

Reliable Nursery Stock

All stock budded from bearing trees,
fruit and ornamental



Read what Hood River says

Hood River, Oregon, Nov. 27, 1909.
This is to certify that I have used Cooper's Tree Spray Fluids, VI, for killing San Jose scale and found it very effectual.

G. R. Castner, County Fruit Inspector.

APTERITE

THE SOIL FUMIGANT
DESTROYS INSECTS IN THE
GROUND

REDUCES LOSSES SAVES PROFITS
IT WILL PAY YOU TO INVESTIGATE

Write for 1910 booklet (32 pages)

Testimony from fruit growers
everywhere

Agent:

C. G. ROBERTS

247 Ash Street Portland, Oregon

Sole Manufacturers:

William Cooper & Nephews
CHICAGO, ILLINOIS

CREATION



The tone is the Jewel.
The case is the Setting.
The combination is the
Steinway—the Perfect
Piano.

HE who is blessed with the power to create is blessed with God's greatest gift to man, and if he uses that power to increase the happiness of his fellow men he becomes a benefactor to the human race.

The world owes homage to the men who have devoted their burning energies to the consummation of one purpose, to the final and most perfect development of an ideal.

The Steinway Piano

Is an example of the grand result of years of persistent, purposeful striving after the very highest musical ideal. Sons have taken up the task where fathers left off, so that alternate generations of genius, working through the finest piano factory in the world, have evolved the Steinway—a piano that has long since been acknowledged the musical masterpiece of the ages.

Priced at \$575, \$625, \$775 and up to \$1,600. Of course you can buy a piano cheaper, but it will be a cheaper piano. Why not get the best?

VICTOR TALKING
MACHINES and
SHEET MUSIC

Sherman Clay & Co.

SIXTH AND MORRISON
PORTLAND, OREGON
Exclusive Steinway Representatives

FRUIT GROWERS, YOUR ATTENTION!

Royal Ann, Bing and Lambert cherry trees; Spitzenberg and Newtown apple trees; Bartlett, Anjou and Comice pears, and other varieties of fruit trees.

A. HOLADAY

MONTE VISTA NURSERY
SCAPPOOSE, OREGON

Two Hard Headed Business Men Select Orchard Homes from Our Tracts

No. 1. Lives in Minnesota. Made a trip through the fruit districts of the West two years ago and made a second trip of investigation this year. He visited the best known fruit districts of the West—was solicited by several agents to buy of them, but came to our office in Minneapolis unsolicited and said our fruit tracts were the best he had seen in his investigations; therefore purchased his orchard tract from us.

No. 2. Has been investigating the principal fruit districts of the West for over two years, is a resident of Portland, a prominent business man, and after seeing our ad in "Better Fruit" wrote to us, came and examined the tracts and purchased immediately, saying that our tracts were the best he had seen.

The purchases made by the two men referred to above, as well as others to whom we could refer you, prove that the most careful purchasers are buying our tracts.

Buying an orchard home is important, therefore investigate all of the well-known fruit districts of the United States, but do not purchase until you examine ours. We cheerfully leave the choice of the selection to you after that.

THE A. C. BOHRNSTEDT CO.

Branch Offices { SALEM, OREGON
CRESWELL, OREGON

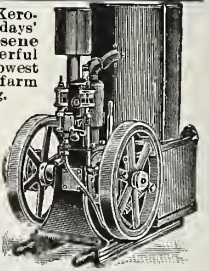
917 Andrus Building, Minneapolis, Minnesota

Use KEROSENE Engine FREE!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing.

Gasoline Going Up!

Automobile owners are burning up so much gasoline that the world's supply is running short. Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints of coal oil do work of three pints gasoline. No waste, no evaporation, no explosion from coal oil.



Amazing "DETROIT"

The "DETROIT" is the only engine that handles coal oil successfully; uses alcohol, gasoline and benzine, too. Starts without cranking. Basic patent—only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h. p., in stock ready to ship. Complete engine tested just before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric-lighting plant. Prices (stripped), \$29.50 up. Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate amazing, money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are first in your neighborhood to write, we will allow you Special Extra-Low Introductory price. Write! Detroit Engine Works, 507 Bellevue Ave., Detroit, Mich.

PUMPS WATER

for your Home, your Stock, or for Irrigation, without care or adjustment. No springs; no weights. Does not even have to be oiled. The Phillips Hydraulic Ram—Simple in construction—nothing to get out of order. Pumps a large amount of water to a low height or a small amount to a greater height. Requires no attention after it is started.

Write for further information. State how much water you have, the amount of fall, etc. A Ram will save you money.



Phillips Hydraulic Ram Co.
432 LUMBER EXCHANGE BLDG., PORTLAND, ORE.

STORAGE

Ship your Furniture to us
to be stored
until you are located

Transfer & Livery Co.

Hood River, Oregon

Use Labels! It Pays

**A GOOD COMBINATION
AND A WINNER**

**1ST GOOD FRUIT
2ND GOOD PACKING
3RD GOOD LABELS**

THE LABEL HELPS.

Schmidt Lithograph Co.

E. SHELLEY MORGAN, MANAGER.

408 WELLS FARGO BLDG.

PORTLAND, OREGON.

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Rogue River Fruit and Produce Association

Packers and Shippers of
Rogue River Fruit

Finest flavored—Longest keepers

PEARS	APPLES
Bartlett	Newtown
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Anjou	Jonathan
Comice	Ben Davis
Winter Nelis	

TWELVE SHIPPING STATIONS

Modern Economy Code
K. S. MILLER, Manager

Why Bother with Irrigation?

ASK

**PHOENIX LUMBER CO.
SPOKANE, WASH.**

ABOUT

Cut Over Lands

YOU CAN BUY CHEAP

BETTER FRUIT

Has no peer in the Northwest.

And so we have established

The Fruit Journal

along similar lines in behalf of the great irrigated fruit districts of the Rocky Mountain region, a companion paper to this, your favorite fruit magazine.

We have made it up-to-date, clean, high class editorially, mechanically and pictorially.

The subscription rate is \$1.00 per year. It is worth it.

**THE INTERMOUNTAIN
FRUIT JOURNAL**

Grand Junction, Colorado

*Ask the People Using Our Boxes About
Quality and Service*

WE MAKE EVERYTHING IN FRUIT PACKAGES

Multnomah Lumber & Box Co.

Jobbers of Pearson Cement-Coated Box Nails

Portland, Oregon



Nine Kimball Cultivators in operation on property of Dufur Orchard Company, Dufur, Oregon, owned by the Churchill-Matthews Company, 510 Spalding Building, Portland, Oregon. This company is using at this time thirty-five Kimball Cultivators on their Dufur, Sheridan, Drain and Cottage Grove properties. This speaks volumes for home-produced machinery. Why go East for yours?

The Kimball Cultivator

Great Weeds and Fern Exterminator

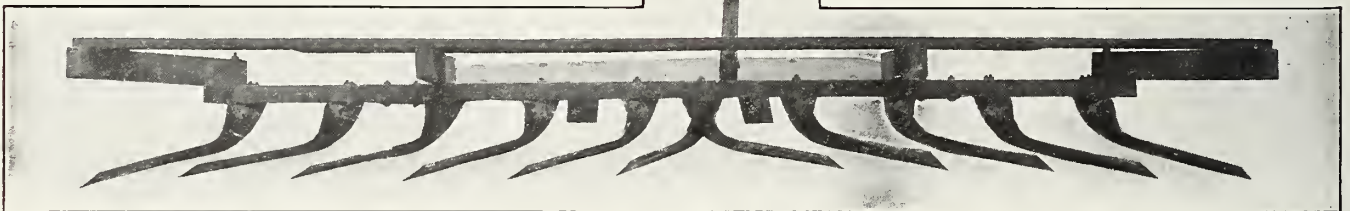
Hood River, Oregon, Feb. 26, 1910.
W. A. Johnston, The Dalles, Oregon.

Dear Sir: I use three "Kimball Cultivators" in my orchard. There is nothing better as a weeder, dust mulcher, or to stir the soil. Yours truly,

E. H. Shepard, Editor "Better Fruit."

Ninety per cent Hood River Orchardists use this machine.

Send for illustrated descriptive booklet.



RETAIL PRICE SCHEDULE

No. 4—4½ feet, 6 blades, weight complete 70 lbs....	\$13.50
No. 5—5½ feet, 7 blades, weight complete 85 lbs....	15.00
No. 6—6 feet, 8 blades, weight complete 100 lbs....	17.50
No. 7—7 feet, 9 blades, weight complete 115 lbs....	18.50
No. 8—8½ feet, 11 blades, weight complete 125 lbs...	20.00
No. 9—10 feet, 13 blades, weight complete 140 lbs...	25.00
No. 10—12 feet, 10 blades, open center, weight complete 160 lbs.....	22.50

No. 11—12 feet, 15 blades, weight complete 185 lbs..	\$30.00
No. 13—One 8½ and one 9 feet, 23 blades, gangs, fully rigged, weight 300 lbs.....	47.50

Extra Frames \$1.00 per foot; weight 10 lbs. per foot.

Extra Blades \$1.50 each; weight 5 lbs. each.

TERMS: Cash with order, except to dealers with established credit. All quotations f.o.b. The Dalles, Oregon.

W. A. JOHNSTON, Manufacturer

Long Distance Phone, Red 991

Office and Factory, 422 East Third Street, The Dalles, Oregon

ANYTHING IN SHEET STEEL



STEEL PIPES SAVE WATER

STEEL PIPES SAVE LABOR

**YOU DO NOT HAVE TO WAIT FOR STEEL PIPES TO
"SOAK UP" AND THEY LAST INDEFINITELY**

WE MANUFACTURE

Galvanized Steel Pipe

Storage Tanks

Galvanized Steel Culverts

Pressure Tanks

Asphaltum Coated Pipe

Steel Flumes

Columbia Hydraulic Rams

COLUMBIA ENGINEERING WORKS, Portland, Oregon

Really, Are Those Trees Grown Without Irrigation

Yes, sir, absolutely.

How old are they?

This summer's growth.

What! do you mean to say those trees have grown five or six feet this summer without irrigation?

That's what they have—but let me explain further:

Those trees are budded—not grafted.

They have a three-year-old whole-root (not piece-root) feeding them.

Observe their uniform height and caliper; their bright, smooth, clean bark; heavy, luxuriant foliage, absolutely free from scale, aphids, etc. This condition is due to proper cultivation, character of soil, intelligent personal supervision, ideal climatic condition, in short, putting into this year's crop of trees what it has taken us a lifetime devoted strictly to the nursery business to learn.

Many people think all trees are alike.

Might as well say all trees in a forest are of equal value and will produce the same number of feet of lumber. But will they? It's what they produce that counts.

ORENCO TREES ARE NOTED FOR EARLY FRUITING. It makes them worth more, but we don't ask more.

If you are planting an orchard for profit select the best trees.

If you're planting for pastime select those you can get for a song.

Orenco trees are grown right—will be dug, shipped and delivered right, and if you plant them properly will fulfill our claims for them.

IF YOU WANT ORENCO TREES, ACT NOW.

**OREGON NURSERY COMPANY
ORENCO, OREGON**



A sample of our yearling trees,
the "Nunbetter" kind

The Acknowledged "AUTHORITY"

on Credits
Trading Rules and Grades
Laws and Commerce

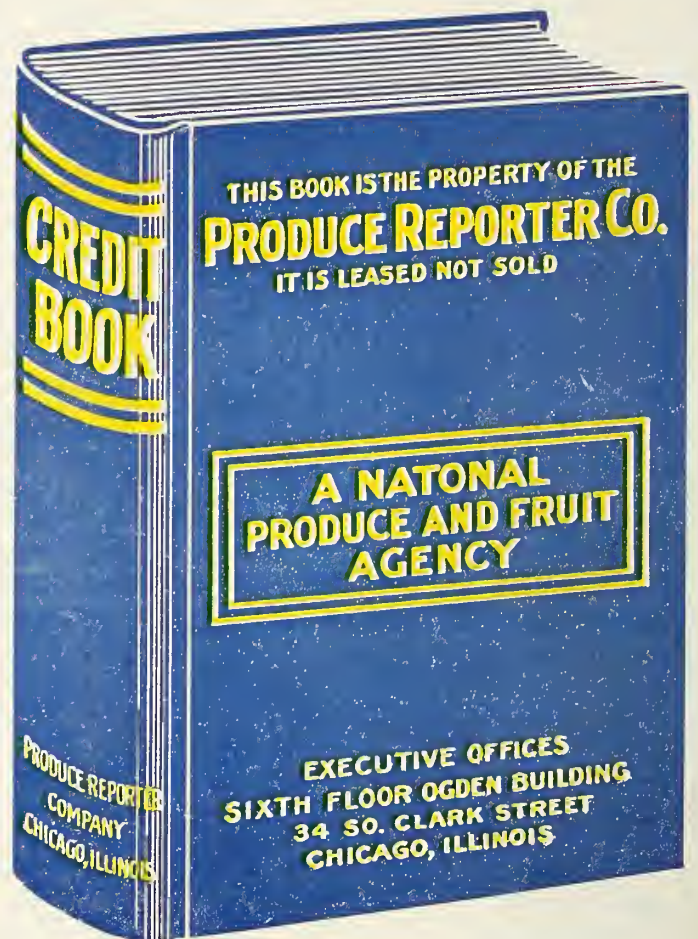
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Dealer's Desk

Shippers
Commission Merchants
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Indispensable

to them
Why not to you?



It's an ASSET—Not an EXPENSE

As Necessary as Your Bank Book

Write for Explanation of Service. Furnished to Members Only

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